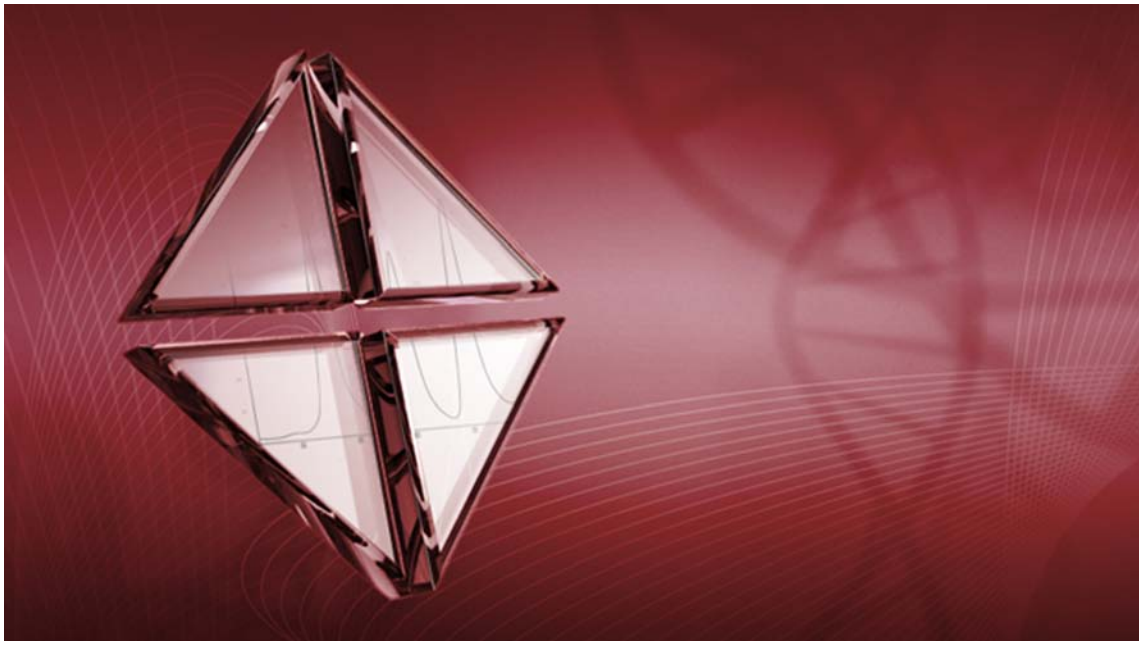
GE Healthcare

# UNICORN™ 6.1

## Administration and Technical Manual



UNICORN

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# 1 Introduction

## Purpose of the Administration and Technical Manual

The UNICORN 6.1 Administration and Technical Manual describes how to install, set up and maintain the UNICORN software.

For the most part, the installation is assumed to be in a network environment. A system administrator should be able to refer to this manual for the information that is necessary to ensure that the network and all UNICORN clients operate smoothly.

Ordinary users, not assigned as system administrators, may need to refer to parts of this manual. This is explained below.

## Intended readers

### System administrators

The general intended reader is a designated UNICORN system administrator, responsible for the network.

In a large organization, the system administrator may be a specific individual, either exclusively responsible for the UNICORN network, or also for the support for other networks or related systems (e.g. LIMS, Laboratory Information Management Systems).

In a smaller organization, the system administrator may be a regular user, who both performs other duties and the duties described in this manual.

- The system administrator will need to be familiar with all the contents of this manual.

### Ordinary users

UNICORN 6.1 may be installed on a stand-alone workstation, with no network connection to other workstations. In this scenario, the UNICORN database and license server software, as well as the client and instrument server software, are installed on the local computer. In other words, all component parts of a UNICORN network are included in the single installation.

- The user of a stand-alone installation will need to refer to this manual for information on how to perform administrative UNICORN duties, for example how to maintain the database, install new instrument configurations etc.
- Normally, ordinary users may refer only to selected, relevant parts and do not need to be familiar with all the contents of this manual.

## Software declaration of conformity

UNICORN 6.1 is technically compatible with all relevant sections of FDA 21 CFR Part 11.

A part 11-system assessment checklist is available on request through the local GEHC representative.

## Contents

This chapter contains these sections:


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# 1.1 Administrator functions – overview

## Administration areas

The table below describes the main areas of UNICORN administration:

| Area | Concerns |
|---|---|
| User administration | User properties and authorization of access to the system, see *Section 3.2 User setup, on page 159*.<br>***Note:*** *The responsibility should should lie on one person, or a small group, at least in larger installations.* |
| System administration | • Maintenance of software aspects of UNICORN, including<br>- definition of connected systems, see *Section 3.1.1 System properties, on page 134*.<br>- monitoring of system usage (logs), see *Section 3.1.5 UNICORN and System logs, on page 152*.<br>• Routine settings and calibration, see *Section 3.1.4 System Settings, on page 147*. |
| Database administration | Set up and maintenance of one or many instances of the UNICORN database, see *Chapter 4 Database administration, on page 192*. |
| Network administration | Setup of the network functions relevant to UNICORN.<br>***Note:*** *In a network installation, this is normally carried out by the IT staff responsible for the company's network.* |

## Actions before UNICORN is installed

Before UNICORN is installed, the administrator must preform the actions in this table to prepare the network environment:

| Step | Action |
|---|---|
| 1 | Prepare a dedicated network, see *Section 2.4.3 Configure the network, on page 78*. |
| 2 | Configure all client computers in the network, see *Section 2.4.4 Configure and set up the client computers, on page 81*. |

## Actions before the UNICORN program can be used

When UNICORN has been installed, the administrator must perform the actions in this table before other users can use the program:

| Step | Action |
|---|---|
| 1 | Set up system definitions for the ÄKTA™ avant systems, see *Section 3.1.1 System properties, on page 134*.<br>***Note:*** *The systems may also be defined as part of the UNICORN installation procedure, when the software is installed on the instrument server computer.* |
| 2 | Define new users with home folders, assigned access groups and access profiles, see *Section 3.2 User setup, on page 159*. |

# 1.2 Network terms and concepts

## Introduction

In this section, some important network terms and concepts are explained.

## Administrator categories and duties

The administrator duties can be divided into two categories with different responsibilities:

- Network administrator: Responsible for network setup, software installation and software maintenance.
- System administrator (or UNICORN administrator): Responsible for the use of UNICORN to control chromatography systems.

The network administrator and the system administrator can be the same person, but the tasks can also be carried out by two different persons.

## Administrator security responsibilities

The different security responsibilities of the network administrator and the UNICORN (system) administrator are listed below.

| Area | Network administrator responsibilities | System administrator responsibilities |
|---|---|---|
| Data storage security (backup routines) | Backup routines for network servers. | Backup routines for the UNICORN database. |
| Network access security | Maintenance of user passwords and access rights to shared general network resources. | - |
| UNICORN security | - | Maintenance of UNICORN user passwords and access rights to UNICORN resources. |

## Local and remote stations

When UNICORN 6.1 is used in a network deployment (as illustrated for example in *Local network for UNICORN only, on page 17*), client computers can be categorized as either local stations or remote stations.

| Station type | Description |
|---|---|
| Local station | A PC to which a chromatography system is physically connected.<br>The local station is the *Instrument Server* for the connected chromatography system. |
| Remote station | A PC to which no chromatography system is physically connected, but which can control systems over a network link. |

***Note:*** *A local station can be used to control other chromatography systems than the one that is connected physically. When controlling other systems than the local system, the station will operate as a remote station.*

## Network terms and general concepts

In the table below are explanations for some network and general concepts which are important to understand when working with UNICORN in a network environment.

| Term | Explanation |
|---|---|
| Storage of data | All UNICORN data (i.e. methods, results, log files, system and user data) are stored in an SQL database. Several installation of the UNICORN database may be running simultaneously in a large deployment. However, the database instances will not communicate with each other. |
| Communication | The local and the remote UNICORN clients and servers use TCP/IP to send commands and data between them. |
| LAN | A *Local Area Network* (LAN) supplies networking capability to a group of computers in close proximity to each other such as in an office building or a lab. A LAN is used for sharing network resources like files, printers or applications. |
| Workstation | A PC computer with a UNICORN software installation. A stand-alone workstation can operate independently of any other UNICORN computer. See *Stand-alone workstation* below. |

| Term | Explanation |
|---|---|
| Stand-alone workstation | A stand-alone workstation has a locally connected instrument and contains all the software components necessary to operate UNICORN as an independent unit, that is<br>• the client software<br>• the instrument server software<br>• the database server software and a local UNICORN database<br>and<br>• the license server software.<br>The workstation may be connected to a network to be able to access other network resources, but it is not set up to interact with other UNICORN clients or common UNICORN servers. |
| Instrument server | The station that controls a connected instrument. The UNICORN instrument server software must be installed. |
| ***Control*** system access mode | Users with ***Control*** access to a system may assume control over the instrument, either using the local, instrument server computer, or from a remote station. |
| ***View*** system access mode | Users with ***View*** access to a system may monitor all activities on the instrument, but cannot control the activities without changing the access mode first. |
| Instrument configuration | The complete dataset defining the properties and enabling the control of an instrument. The instrument configuration consists of<br>• strategy<br>• flow scheme<br>• phase library<br>and<br>• embedded software.<br>(This is described further in *Section 3.1.2 Instrument Configurations, on page 141*.) |
| Strategy | The strategy defines the available method and manual instructions, system settings, run and curve data. It is part of the *Instrument Configuration*. |

| Term | Explanation |
|---|---|
| Flow scheme | The flow scheme contains the necessary elements which are used to create the flow scheme images in the ***Method Editor*** and ***System Control*** modules. |
| Phase library | The phase library contains predefined phases and methods. It is part of the *Instrument Configuration* and adapted to the properties and available options for a specific instrument or group of instruments. |
| Floating license | The user licenses for UNICORN 6.1 are floating. That means that there can only be as many simultaneous users as there are valid licenses. UNICORN 6.1 may be installed on more computers than the number of valid licenses, but not all these computers can be used simultaneously. |

# 1.3 Network environment

## Who can perform the network setup?

The network setup should be performed by someone with experience in Windows™ XP and/or Windows 7, and network installations. Preferably, a skilled network administrator should be involved in the network setup, the installation of the UNICORN software and the maintenance of the network.

**Tip:** Network recommendations are listed in *Section A.1 System recommendations, on page 244*.

## UNICORN versions

All computers in a UNICORN 6.1 network deployment (described in *Section 1.4 Deployment examples, on page 15*) must have UNICORN 6.1 software installed. Older versions of UNICORN, including UNICORN 6.0, cannot be used in a UNICORN 6.1 network.

UNICORN versions older than 6.0 may be installed on the same computers as UNICORN 6.1. However, a computer that is used as instrument server with UNICORN 6.1 cannot also be used as a controlling computer for instruments using UNICORN 5. UNICORN 6.0 cannot be installed on the same computer as UNICORN 6.1.

## UNICORN networks as parts of other Local Area Networks

In most cases, UNICORN computers will be connected to a Local Area Network (LAN) to access other network resources and, where applicable, the Internet.

Stand-alone workstations may or may not be connected to a network depending on the need for access to other resources. Since such workstations contain all necessary components for independent operation, the external network connection is not essential when using UNICORN. Network connection between the computer and the ÄKTA avant instrument is however essential.

A UNICORN network, consisting of several client stations sharing common servers, may either be a totally independent network with no external access or connected to an external office LAN. The external LAN connection is necessary for example to provide Internet access and access to other network resources.

The scenarios described above are illustrated in *Section 1.4 Deployment examples, on page 15*.

***Note:*** *UNICORN will not work in a network environment where some UNICORN computers are connected in a workgroup and others are in a domain.*

# 1.4 Deployment examples

## Introduction

This section shows three examples of how UNICORN can be deployed in different environments.

## Stand-alone deployment

The figure below illustrates a stand-alone workstation:

The workstation is a stand-alone unit which can operate independently of any other UNICORN workstation or server. It contains all the necessary software components, that is

- the UNICORN client software
- instrument server software
- database server and a local database

  and
- software for license authentication

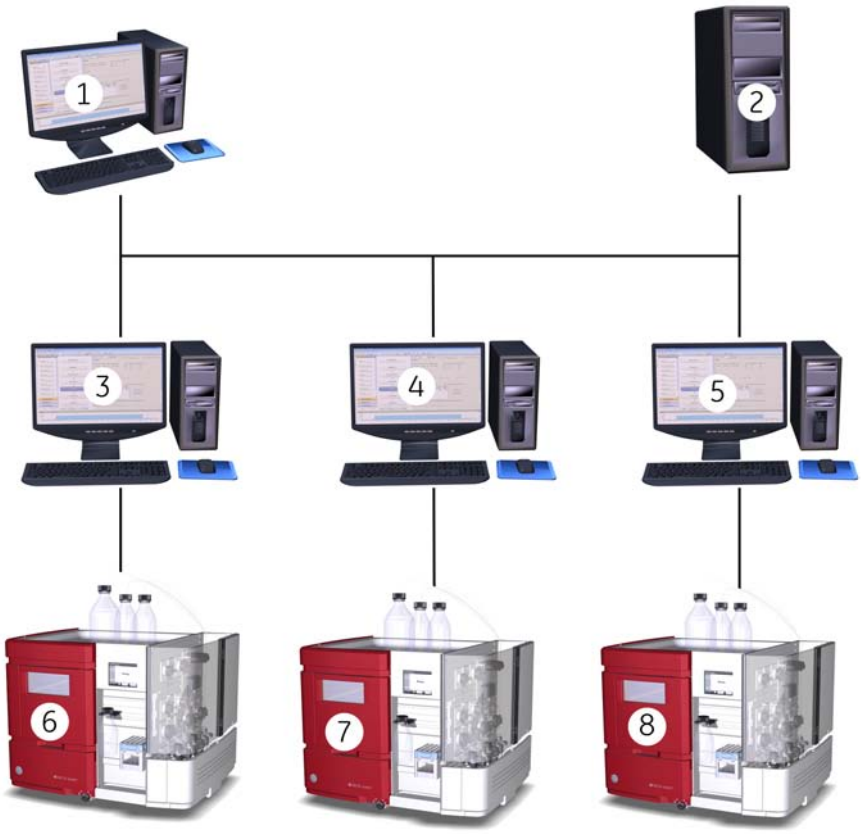
In this deployment example, the workstation may also be connected to an office network. The computers delivered by GE Healthcare with ÄKTA avant are equipped with two network interface cards as a standard feature. One card is used for the communication with the instrument and the other for communication with a network. The connected network may be a UNICORN network as described in the other deployment examples below, or an office network.

You may also connect the workstation to both the instrument and a network from a single network interface card by using a switch. This solution is not recommended since it may impair the system performance.

You will use the ***Full Installation*** alternative for this workstation. This option is described in *Section 2.3.1 Install the UNICORN software - Full installation, on page 33*.

## Local network for UNICORN only

The figure below illustrates how a network with a dedicated server and several client workstations can be organized for exclusive UNICORN use:

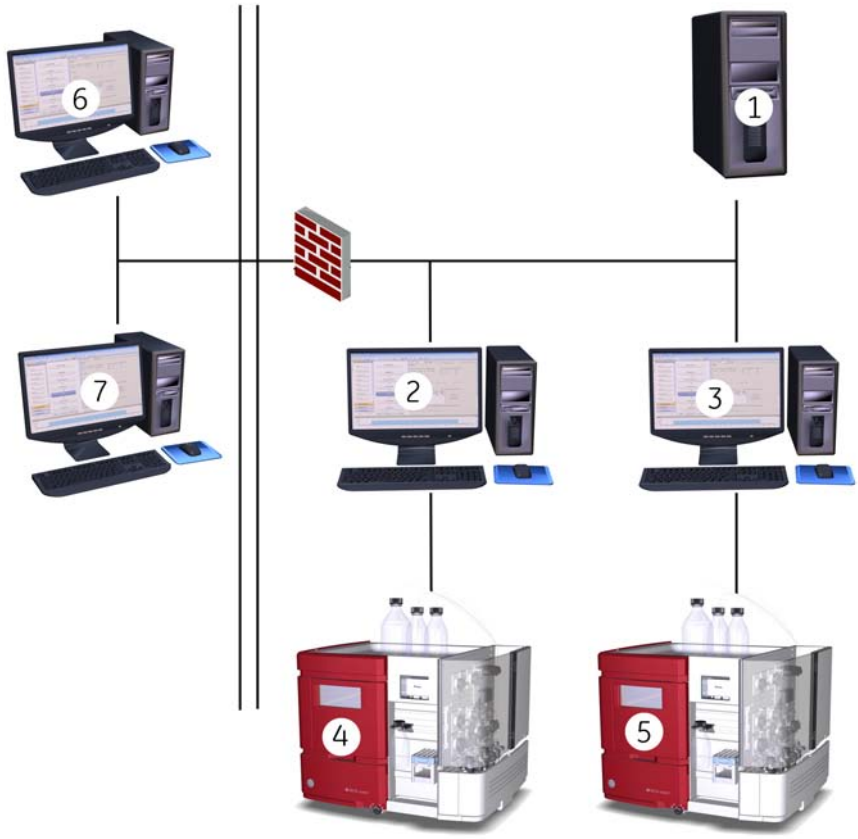



- PC 1 is a *remote station*: it has UNICORN installed but is not directly connected to a chromatography system. Via the network, remote stations can control the chromatography systems that are connected to local stations.
- PC 2 is a server. The UNICORN database and license server software is installed here.
- PCs 3, 4 and 5 are *local stations*: they have UNICORN installed and are directly connected to chromatography systems 6, 7 and 8 as *instrument servers*. To have a chromatography system accessible remotely, the local station that is the instrument server must be switched on and logged on to the network.

You will use different options from the ***Custom Installation*** alternative for each of the client stations and the server in this scenario. The client installation is described in *Section 2.4.5 Install the UNICORN 6.1 Client/Instrument server software, on page 88*. The server installation is described in *Section 2.4.1 Install a UNICORN database and license server, on page 57*.

## UNICORN network as part of larger LAN

The figure below illustrates how a UNICORN network can be included as part of a larger Local Area Network:




- PC 1 is a server. The UNICORN database and license server software is installed here.

- PCs 2 and 3 are *local stations*: they have UNICORN installed and are directly connected to chromatography systems 4 and 5 as *instrument servers*.
- The UNICORN network is connected to the larger LAN, which serves the entire organization and provides access to the Internet, other network resources (i.e. printers, office application servers etc.) and other client computers. The connection between the UNICORN network and the larger LAN is through a router and protected by a firewall.
- PCs 6 and 7 are connected to the larger LAN and not directly to the UNICORN LAN. Provided the units have UNICORN client software installed and are allowed access by the firewall, they can operate UNICORN remotely and have access to the common database on the UNICORN database server.

You will use different options from the ***Custom Installation*** alternative for each of the client stations and the server in this scenario. The client installation is described in *Section 2.4.5 Install the UNICORN 6.1 Client/Instrument server software, on page 88*. The server installation is described in *Section 2.4.1 Install a UNICORN database and license server, on page 57*.

# 1.5 UNICORN 6.1 user documentation

## Introduction

This section describes the user documentation that is delivered with an ÄKTA avant system.

## User documentation

The user documentation listed in the table below is available from the ***Help*** menu in UNICORN or on the ÄKTA avant and UNICORN User Documentation CD.

| Document | Main contents |
|---|---|
| ÄKTA avant and UNICORN 6.1 Installation Guide | Site preparation, stand-alone installation and test procedure. |
| Getting Started with ÄKTA avant and UNICORN 6.1 | System overview and instructions to perform a basic run. |
| ÄKTA avant and UNICORN 6.1 User Manual | Instructions for safe handling of the system. Descriptions of components. Information about how to run and maintain the system. |
| UNICORN Help | Dialog descriptions for UNICORN (from the ***Help*** menu). |
| UNICORN 6.1 Method Manual | Overview and detailed descriptions of the method creation features in UNICORN. Instructions on how to use the software. Workflow descriptions for common operations. |
| UNICORN 6.1 Evaluation Manual | Overview and detailed descriptions of the evaluation features in UNICORN. Instructions on how to use the software. Workflow descriptions for common operations. |
| UNICORN 6.1 Administration and Technical Manual | Network setup and complete software installation. Administration of UNICORN and the UNICORN database. |

# 2 Installation and configurations

## Introduction

This chapter describes how to

- install a complete UNICORN 6.1 installation on a stand-alone workstation (Full installation)
- install a UNICORN database and license server (Custom installation)

  and
- install UNICORN software client and instrument server software on a network client station (Custom installation).

It also describes how to

- define a system as part of the installation
- configure E-licenses
- configure Windows settings necessary for the UNICORN flow schemes in a netwrok deployment
- configure firewall settings, when necessary
- upgrade previously installed UNICORN versions (6.0 only) to UNICORN 6.1
- remove UNICORN installations

  and
- set up a system printer.

Finally, the chapter also includes listings and descriptions of other software that are installed as prerequisites for the UNICORN 6.1 installation.

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# 2.1 Installation overviews

## Introduction

This section provides overviews for UNICORN 6.1 installations and configurations either as independent, stand-alone workstations or in a small, dedicated network.

## Installation summary - stand-alone workstation installation

The table below is an overview of the complete stages in the UNICORN 6.1 installation procedure and the related actions required to set up a UNICORN stand-alone workstation. This installation option is called a ***Full Installation*** in the installation program.

| Stage | Description |
|---|---|
| 1 | Install prerequisite software applications necessary to run the UNICORN software.<br>*Reference* See *Section 2.2 Other software installed by UNICORN 6.1, on page 29*. |
| 2 | Install the UNICORN 6.1 software.<br>*Reference* See *Section 2.3.1 Install the UNICORN software - Full installation, on page 33*. |
| 3 | Configure an e-license.<br>*Reference:* See *Section 2.3.2 Configure an e-license, on page 45*. |
| 4 | Define a system.<br>*Reference:* See *Section 3.1.3 Define a new system, on page 144*. |
| 5 | Define a user profile and a home folder.<br>*Reference*: See *Section 3.2.3 Create a new user, on page 167*. |
| 6 | Check the system settings for the attached ÄKTA avant instrument.<br>*Reference*: See *Section 3.1.4 System Settings, on page 147*. |

## Installation summary - network installation

The table below is an overview of the complete stages in the UNICORN 6.1 installation procedure and the related actions required to set up a complete working environment for UNICORN in a network.

| Stage | Description |
|---|---|
| 1 | Back up database instances if you are changing from stand-alone installations into a network deployment. |
| 2 | Install prerequisite software applications necessary to run the UNICORN software on the *Database and License server* computer.<br>*Reference* See *Section 2.2 Other software installed by UNICORN 6.1, on page 29*. |
| 3 | Install the UNICORN 6.1 software on the *Database and License server* computer.<br>*Reference*: See *Section 2.4.1 Install a UNICORN database and license server, on page 57*. |
| 4 | Configure e-licenses.<br>*Reference:* See *Section 2.3.2 Configure an e-license, on page 45*. |
| 5 | If necessary, prepare the *Instrument Server* computers.<br>*Reference*: See *Section 2.4.4 Configure and set up the client computers, on page 81*.<br>***Note:*** *Previous UNICORN installations must be removed if the Instrument Server computers have been used as stand-alone units.* |
| 6 | Install prerequisite software applications necessary to run the UNICORN software on the *Instrument Server* computers.<br>*Reference* See *Section 2.2 Other software installed by UNICORN 6.1, on page 29*. |
| 7 | Install the UNICORN 6.1 software on *Instrument Server* computers in the network.<br>*Reference*: See *Section 2.4.5 Install the UNICORN 6.1 Client/Instrument server software, on page 88*. |
| 8 | Define systems.<br>*Reference:* See *Section 3.1.3 Define a new system, on page 144*. |

| Stage | Description |
|---|---|
| 9 | Check the system settings for the attached ÄKTA avant instruments.<br>*Reference*: See *Section 3.1.4 System Settings, on page 147*. |
| 10 | If desired, install UNICORN 6.1 software on *Remote station* computers in the network, after installing any prerequisite software. |
| 11 | If desired, set up a default printer for system generated prints (e.g. printed reports generated by evaluation procedures).<br>*Reference:* See *Section 2.8 Printers, on page 123*. |
| 12 | **Set up user access rights and profiles**<br>Define access levels for the installation.<br>*Reference*: See *Section 3.2.1 User access groups, on page 160* and *Section 3.2.2 Access items, on page 165*. |
| 13 | Define users with home folders and access profiles.<br>*Reference*: See *Section 3.2.3 Create a new user, on page 167*. |

***Note:*** *This overview includes all the necessary actions for a network environment with several users and different work descriptions. Some of the stages may not be applicable for your organization. You may perform the actions in a different order and for a single client computer or user at a time if that is preferable.*

## The Custom installation options

Using the Custom UNICORN 6.1 installation, you may select the software component parts that are needed for the workstation in question.

The Custom installation options are described in the table below.

| Software components | Characteristics |
|---|---|
| UNICORN Software Client | The UNICORN client software for the station, including the four UNICORN software modules; ***Administration***, ***Method Editor***, ***System Control*** and ***Evaluation***.<br>Select this option if the station will be used as a remote station only. This option does not include the necessary server components to control a locally connected ÄKTA avant instrument. |

| Software components | Characteristics |
|---|---|
| UNICORN Instrument server and UNICORN Software Client | This option includes the UNICORN client software described above, as well as the software necessary to control and manage an ÄKTA avant instrument that is connected to the station. |
| Database server and license server | This option installs the server software necessary to operate the database where all UNICORN data is stored. It also installs the license server software which is used to authenticate that all UNICORN software clients with access to the network are properly licensed.<br>In a network environment, the database and license server will normally be installed on a dedicated server computer. |

## Installation prerequisites

Before you start the installation procedure the operating system, Windows XP or Windows 7, must be correctly installed on your computer. See the operating system documentation for details.

***Note:*** *UNICORN 6.1 is not tested for operation in a mixed Windows XP/Windows 7 environment. It is our recommendation that all client stations and servers use the same operating system.*

## Do not copy the DVD-ROM or decompress the files

UNICORN 6.1 is supplied on a DVD-ROM. Files on the DVD-ROM are compressed and the installation cannot be performed by simply copying the files onto the hard disk. However, the installation files can by copied to a hard drive and the installation may be run from the hard drive instead.

During the installation procedure, the required folder structure is created on the hard disk and the files are decompressed. Do *not* attempt to decompress the files using any other file decompression utility.

## Upgrading a UNICORN installation

Upgrading UNICORN 6.0 installations to UNICORN 6.1 is a relatively simple matter of installing the new software version and converting the database into UNICORN 6.1 standard. This is described in *Section 2.7 Upgrade UNICORN 6.0 to UNICORN 6.1, on page 117*.

Replacing a UNICORN installation older than UNICORN 6.0 (e.g. UNICORN 5.2 and older) with the UNICORN 6.1 version of the software is not possible, since the data was stored as files in a folder structure and not in a database in these versions. It is possible to operate UNICORN 6.1 in parallell with older versions, but methods and results cannot be shared.

You can import the result data from UNICORN 5.x into the UNICORN 6.1 database, provided it has been created using ÄKTAexplorer™ or ÄKTApurifier™ instruments. The import will not be complete, but it will include enough data to enable comparison between the older results and new results generated in UNICORN 6.1. The import is described further in *Section 4.2.6 Import data from UNICORN 5.x and older versions, on page 211*.

## Changing the installation type

If you want to change a stand-alone workstation to become a network client unit, you must first remove the UNICORN 6.1 installation before you can install the network instrument server and/or client software version. The removal is described in *Section 2.9 Remove a UNICORN 6.1 installation, on page 125*.

If you wish to merge several independent stand-alone workstations into a network with a common database, you should follow the procedure described below. The largest database should be restored on the new database server.

***Note:*** *The e-licenses for the stand-alone workstations will need to be re-hosted to the common e-license server in the scenario described below. Contact GE Healthcare for information and assistance.*

| Step | Action |
|---|---|
| 1 | Create a backup of the database from the workstation that has the largest database, and save it outside the regular backup folder. |
| 2 | Remove the installation from the workstation. |
| 3 | Install the database and license server software. |
| 4 | Restore the database backup to the empty, new database. |

| Step | Action |
|---|---|
| 5 | Export and save the log files from each of the other workstations.<br>(These logs cannot be imported into the new database, but should be saved to provide a history of usage for the workstations before the database merge) |
| 6 | Export all results and methods you wish to move from the other workstations. |
| 7 | Perform database backups on the other workstations |
| 8 | Remove the Full installations from the workstations and install the client/instrument server versions instead. |
| 9 | Re-define the systems. |
| 10 | Import results and methods as needed. |

***Note:*** *DoE results can only be exported as Modde projects. However, Modde projects cannot be imported into a UNICORN database. This means that DoE results cannot be moved from a stand-alone workstation database to a common database in the same manner as other results.*

# 2.2 Other software installed by UNICORN 6.1

## Required software applications

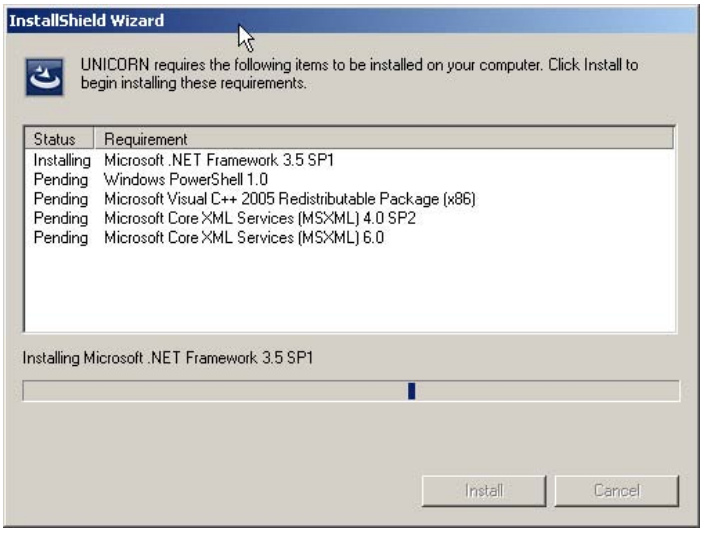
The following other software applications must be installed before the UNICORN installation can begin:

- MS Windows Installer 4.5
- Microsoft™ .Net Framework 3.5 SP1.
- Windows PowerShell™ 1.0
- Microsoft Visual C++™ 2005 Redistributable Package
- Microsoft Core XML Services (MSXML) 4.0 SP2
- Microsoft Core XML Services (MSXML) 6.0
- OPC Core Components Redistributable

The installation will be initiated automatically by the UNICORN 6.1 installation program. If any of the listed applications is already installed it will not be included in this installation step. You may need to restart the computer several times to proceed from one application to the next.

***Note:*** *This process may take up to one hour to complete if all applications must be installed.*

The InstallShield Wizard is illustrated below:



***Note:*** *By default, the applications listed above will be installed on the computer C drive. If the available space on this drive is insufficient, the installation may fail and the installation program will attempt to repeat the installation after each restart. Ensure that enough space is available on the C drive before starting the installation. The actual required space will vary depending on what is previously installed on the computer (e.g. applications listed above), and subsequent selections in the UNICORN installation. However, the installation program needs a total of 11 GB of free space to initiate the installation.*

## The help viewer application

As part of the UNICORN software installation, a special viewer for the online help will be installed. This application, the ***MadCap™ Help Viewer***, is accessed from the UNICORN user interface either by clicking help buttons in dialogs, by pressing the **F1** key or by selecting ***Help*** menu items.

By default, this application will place a shortcut icon on the desktop. If you cannot log on to UNICORN, you can open the online help using this shortcut.

To start the UNICORN online help:

- Double-click the shortcut icon.

- Choose ***File:Open***.
- Browse to the folder `UNICORN\Documentation\Help`
- select the file `Manual.mchelp`

  and
- click `the` ***Open*** button.

This will open the online help at the portal page.

***Note:*** *Sometimes Windows may need to register the MadCap Help Viewer as the application for files of the type .mchelp before it will recognize calls from help buttons in UNICORN 6.1. If that happens, you may need to open the viewer manually as described above. It should only be necessary to do this once for a new Windows user profile.*

## Other software installed by GE Healthcare

On computers delivered and/or installed by GE Healthcare, service staff may have installed a software tool which is used for diagnostic, testing and quality control. This tool can only be used by GE Healthcare service staff, for quality control, to optimize system performance and as an aid in troubleshooting.

# 2.3 Stand-alone workstation installation and configuration

## Introduction

The UNICORN 6.1 software is normally installed by a GE Healthcare representative. Follow the instructions in this section to install the program yourself if your system is not preinstalled.

## Contents

This section contains the following topics:


| Section | See page |
|---|---|
| 2.3.1 Install the UNICORN software - Full installation | 33 |
| 2.3.2 Configure an e-license | 45 |
| 2.3.3 Define a system at installation | 53 |

# 2.3.1 Install the UNICORN software - Full installation

## Introduction

The full UNICORN installation includes all software component parts necessary to operate UNICORN and a connected, local ÄKTA avant instrument.

The installation includes the components described in the table below.

| Software component | Characteristics |
|---|---|
| UNICORN client | The UNICORN client software for the workstation, including the four UNICORN software modules; ***Administration***, ***Method Editor***, ***System Control*** and ***Evaluation***. |
| Instrument server | The UNICORN software necessary to control and manage an ÄKTA avant instrument that is connected to the workstation. |
| Database server | The server software necessary to operate the database where all UNICORN data is stored. Microsoft SQL Server™ Express Edition is used for this. |
| License server | The license server software is used to authorize that the UNICORN software installation is properly licensed. |

# Step 1 - Insert the installation DVD

Follow the instructions in the table below to begin the installation:

| Step | Action |
|---|---|
| 1 | Insert the installation DVD in your DVD drive.<br>*Result:* The UNICORN Installation wizard opens with a welcome dialog.<br>**Tip:** If the DVD drive is not set up to allow automatic start, browse the DVD contents and doubleclick the file UNICORNSetup.exe to initiate the installation. |
| 2 | Click the ***Start*** button. |
| 3 | The UNICORN Installation Program is launched. Continue the installation below. |

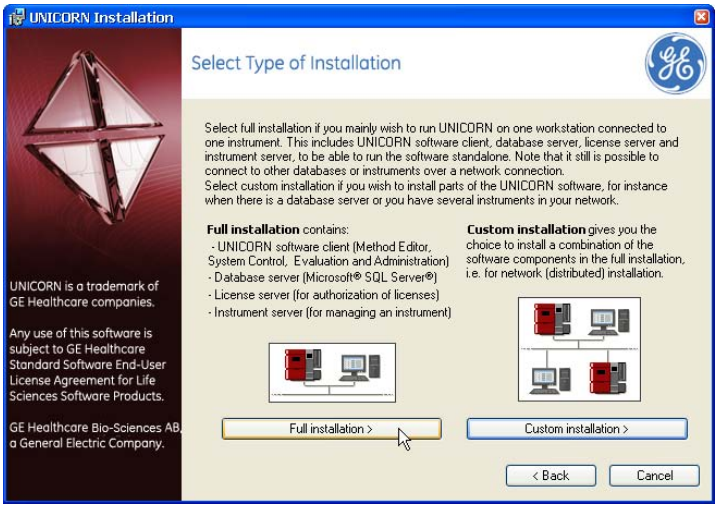
UNICORN Installation
UNICORN is a trademark of GE Healthcare companies.
Any use of this software is subject to GE Healthcare Standard Software End-User License Agreement for Life Sciences Software Products.
GE Healthcare Bio-Sciences AB, a General Electric Company.
UNICORN™ Software Installation
Welcome to the UNICORN™ software installation program. This program will support you with installation of the UNICORN control software. Follow the instructions in every step of the installation. When the installation is completed, you may configure the e-license and define a system, this will require an internet connection and that the instrument is physically connected.
Start >
Close

**Tip:** You can exit the installation by clicking either the ***Close*** or, in some subsequent wizard steps, the ***Cancel*** button. However, if you do this the installation will be incomplete and the software cannot be used. You may also click the ***Back*** button in some installation steps, to return to a previous step to change selections.

## Step 2 - Select type of installation

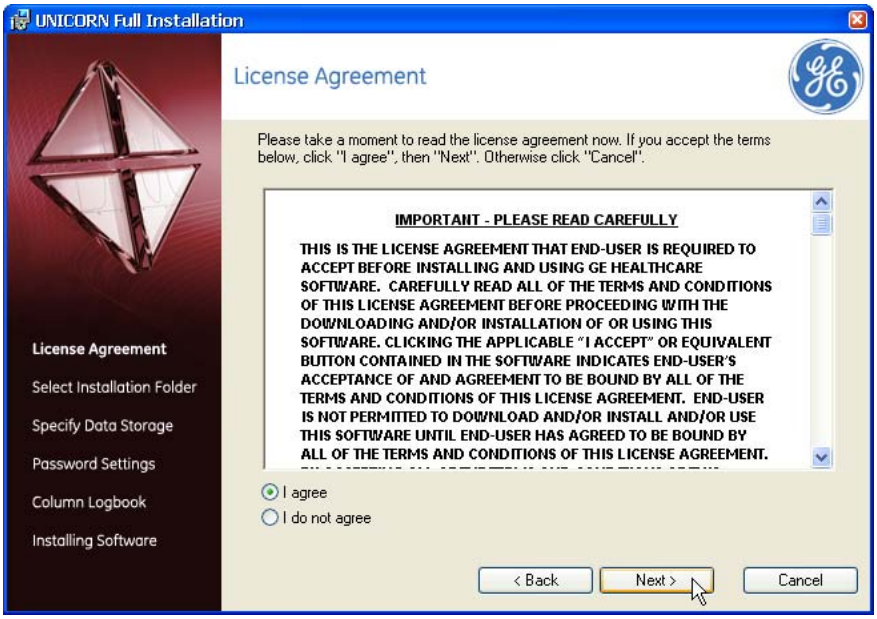
In the second step of the installation you decide what kind of installation you want to make:

| Step | Action |
|---|---|
| 1 | Select the installation type:<br>• ***Full installation***<br>which includes all the UNICORN software necessary for stand-alone operation.<br>or<br>• ***Custom installation***<br>which allows you to install selected components. (This installation option is described in *Section 2.4.5 Install the UNICORN 6.1 Client/Instrument server software, on page 88*). |
| 2 | Click the ***Full installation*** button to proceed with this option, for a stand-alone workstation installation. |


UNICORN Installation
Select Type of Installation
Select full installation if you mainly wish to run UNICORN on one workstation connected to one instrument. This includes UNICORN software client, database server, license server and instrument server, to be able to run the software standalone. Note that it still is possible to connect to other databases or instruments over a network connection.
Select custom installation if you wish to install parts of the UNICORN software, for instance when there is a database server or you have several instruments in your network.
Full installation contains:
- UNICORN software client (Method Editor, System Control, Evaluation and Administration)
- Database server (Microsoft® SQL Server®)
- License server (for authorization of licenses)
- Instrument server (for managing an instrument)
Custom installation gives you the choice to install a combination of the software components in the full installation, i.e. for network (distributed) installation.
UNICORN is a trademark of GE Healthcare companies.
Any use of this software is subject to GE Healthcare Standard Software End-User License Agreement for Life Sciences Software Products.
GE Healthcare Bio-Sciences AB, a General Electric Company.
Full installation >
Custom installation >
< Back
Cancel

## Step 3 - License agreement

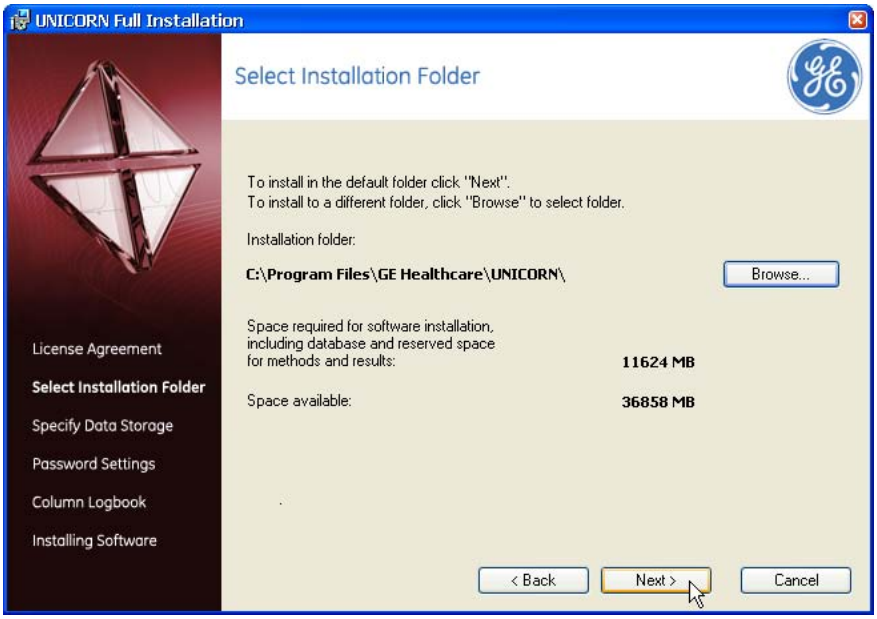
The next installation step shows the UNICORN 6.1 License Agreement text.


UNICORN Full Installation
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I agree", then "Next". Otherwise click "Cancel".
IMPORTANT - PLEASE READ CAREFULLY
THIS IS THE LICENSE AGREEMENT THAT END-USER IS REQUIRED TO ACCEPT BEFORE INSTALLING AND USING GE HEALTHCARE SOFTWARE. CAREFULLY READ ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT BEFORE PROCEEDING WITH THE DOWNLOADING AND/OR INSTALLATION OF OR USING THIS SOFTWARE. CLICKING THE APPLICABLE "I ACCEPT" OR EQUIVALENT BUTTON CONTAINED IN THE SOFTWARE INDICATES END-USER'S ACCEPTANCE OF AND AGREEMENT TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT. END-USER IS NOT PERMITTED TO DOWNLOAD AND/OR INSTALL AND/OR USE THIS SOFTWARE UNTIL END-USER HAS AGREED TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT.
I agree
I do not agree
< Back
Next >
Cancel
License Agreement
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software

| Step | Action |
|---|---|
| 1 | Read the license agreement carefully. |
| 2 | Select the ***I agree*** option. |
| 3 | Click the ***Next*** button to proceed. |

## Step 4 - Select installation folder

Select the installation folder for UNICORN:

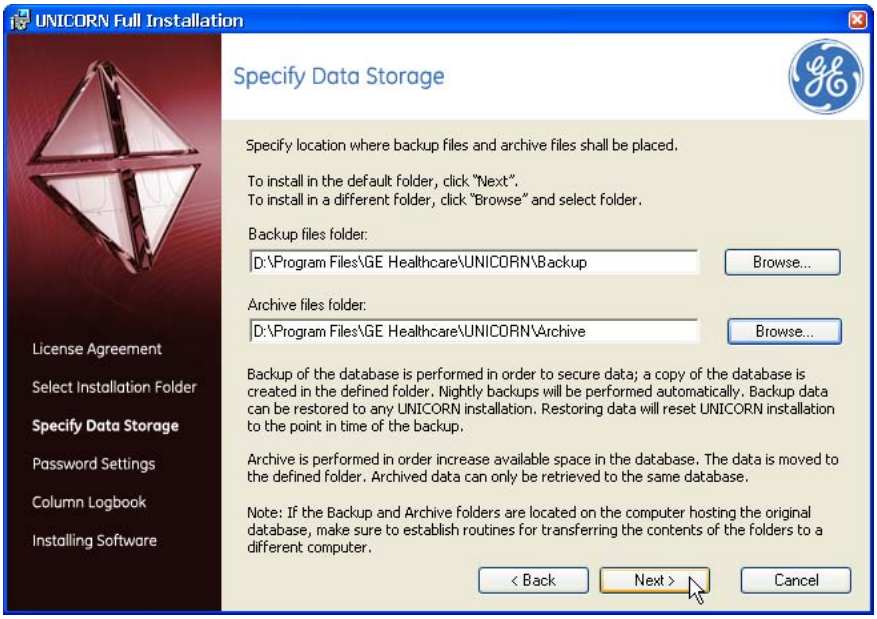



| Step | Action |
|---|---|
| 1 | By default, UNICORN will suggest the following installation folder: `C:\Program Files\GE Healthcare\UNICORN\`.<br>Either<br>• accept this installation folder<br>or<br>• click ***Browse*** and locate the folder you want to install in.<br>***Note:*** *UNICORN will calculate the available diskspace for the selected installation folder. The space required for the installation is also shown.*<br>***Note:*** *UNICORN 6.1 cannot be installed on a compressed disk.* |
| 2 | Click the ***Next*** button to proceed. |

***Note:*** *The general UNICORN installation folder structure will be saved in the folder selected in this step. However, the SQL Server software and e-license server software will be installed on the C drive by default. If the available space for this is insufficient, the installation may fail. The required space will vary depending on what is previously installed on the computer but at least 2 GB should be available to ensure that the installation will be completed correctly.*

## Step 5 - Specify data storage

Specify storage folders for database backups and for archived database items.


UNICORN Full Installation
Specify Data Storage
Specify location where backup files and archive files shall be placed.
To install in the default folder, click "Next".
To install in a different folder, click "Browse" and select folder.
Backup files folder:
D:\Program Files\GE Healthcare\UNICORN\Backup
Browse...
Archive files folder:
D:\Program Files\GE Healthcare\UNICORN\Archive
Browse...
Backup of the database is performed in order to secure data; a copy of the database is created in the defined folder. Nightly backups will be performed automatically. Backup data can be restored to any UNICORN installation. Restoring data will reset UNICORN installation to the point in time of the backup.
Archive is performed in order increase available space in the database. The data is moved to the defined folder. Archived data can only be retrieved to the same database.
Note: If the Backup and Archive folders are located on the computer hosting the original database, make sure to establish routines for transferring the contents of the folders to a different computer.
< Back
Next >
Cancel
License Agreement
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software

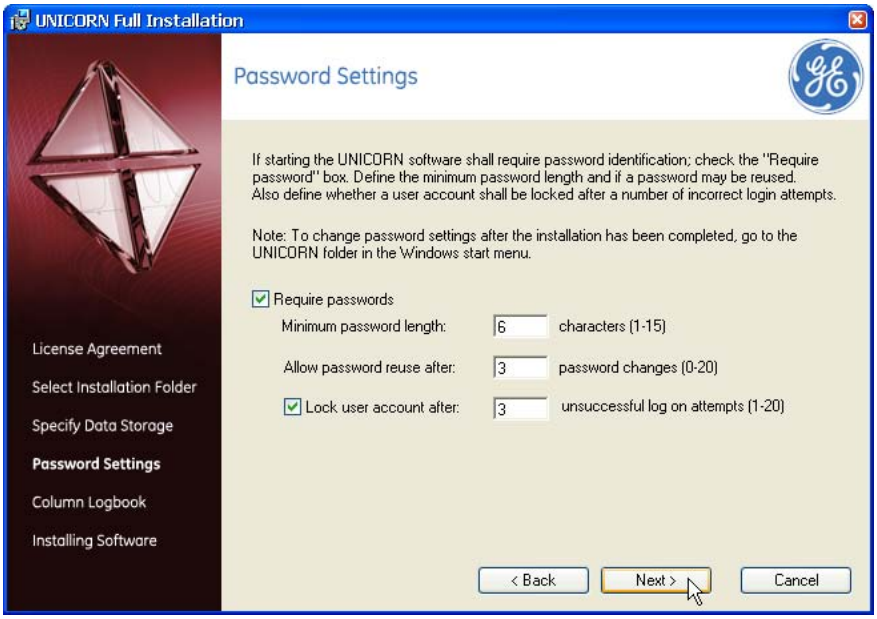
| Step | Action |
|---|---|
| 1 | Click the ***Browse*** button adjacent to the ***Backup files folder*** field and navigate to a suitable folder where the database backups should be saved.<br>***Note:*** *By default UNICORN will suggest a* ***Backup*** *folder in the selected installation folder. However, if possible it is recommended that the backups are saved on another physical drive than where the active database is stored. This physical drive must be installed on the same computer as where the database is installed, for example a* ***D*** *drive as illustrated above. Network folders cannot be used for this purpose.*<br>***Note:*** *Ensure that the user "SYSTEM" has access rights to the selected folder*[1]*.* |
| 2 | Click the ***Browse*** button adjacent to the ***Archive files folder*** field and navigate to a suitable folder where the data should be archived.<br>***Note:*** *By default UNICORN will suggest an* ***Archive*** *folder in the selected installation folder. However, if possible it is recommended that the archives are saved on another physical drive than where the active database is stored. This physical drive must be installed on the same computer as where the database is installed. Network folders cannot be used for this purpose.*<br>***Note:*** *Ensure that the user "SYSTEM" has access rights to the selected folder.* |
| 3 | Click the ***Next*** button to proceed. |

***Note:*** *To ensure data safety, it is recommended that the backup and the archive folders are copied or moved at regular intervals to another server computer or some other storage media.*

1 *The access rights are shown in the* ***Security*** *tab of the folder* ***Properties****.*

## Step 6 - Password settings

Choose the password settings you wish to apply for UNICORN.


UNICORN Full Installation
Password Settings
If starting the UNICORN software shall require password identification; check the "Require password" box. Define the minimum password length and if a password may be reused. Also define whether a user account shall be locked after a number of incorrect login attempts.
Note: To change password settings after the installation has been completed, go to the UNICORN folder in the Windows start menu.
Require passwords
Minimum password length: 6 characters (1-15)
Allow password reuse after: 3 password changes (0-20)
Lock user account after: 3 unsuccessful log on attempts (1-20)
License Agreement
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software
< Back
Next >
Cancel

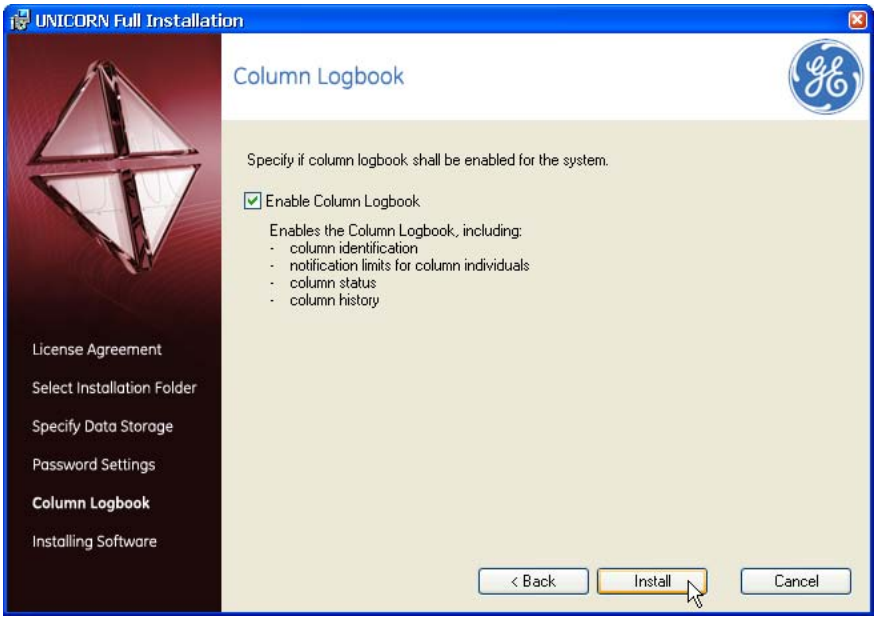
| Step | Action |
|---|---|
| 1 | By default, the ***Require passwords*** option is selected.<br>• If you do not want to use passwords at log on or for electronic signatures, de-select this option and proceed with step 5 in this instruction. |
| 2 | Enter the minimum number of characters required for the password (Between 1 and 15 characters).<br>**Tip:** Recommendations for how passwords should be set up are listed in *Section 3.2.5 User passwords and account access limitations, on page 180*. |
| 3 | Enter the number of times the passwords must be changed before an identical password may be used again.<br>• In the example illustration above, the password must be changed three times before the first password may be used again. |

| Step | Action |
|---|---|
| 4 | Select if user accounts should be locked after log on attempts have failed, and enter the number of tries before the account is locked.<br>• In the example illustration above, the user account will be locked after three failed log on attempts. Another user with ***User Setup*** access must reset the passwords before the user account is available again. |
| 5 | Click the ***Next*** button to proceed. |

**Tip:** Under the Windows Start:Programs:GE Healthcare menu you will find ***Change Installation Settings***. This dialog can be used to edit the password settings after the installation.

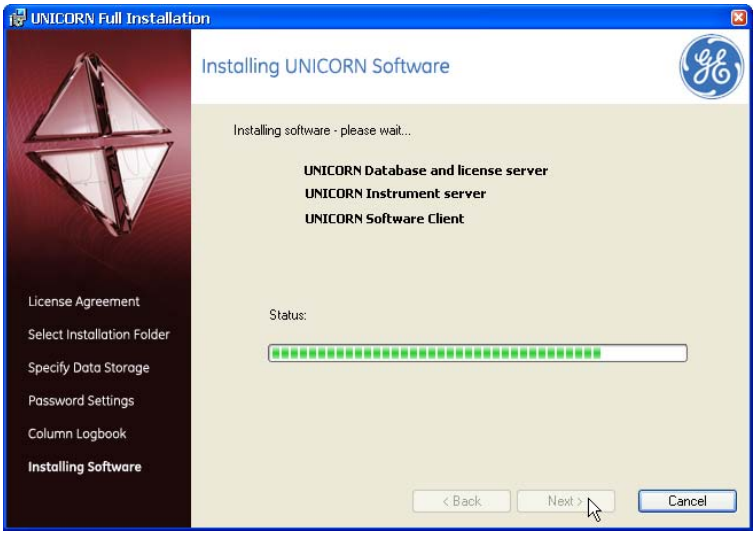
## Step 7 - Column logbook

The ***Column Logbook*** enables the recording of usage and performance history of individual columns.




| Step | Action |
|---|---|
| 1 | Click the ***Enable Column Logbook*** checkbox to set up the logbook.<br>(This is selected by default) |

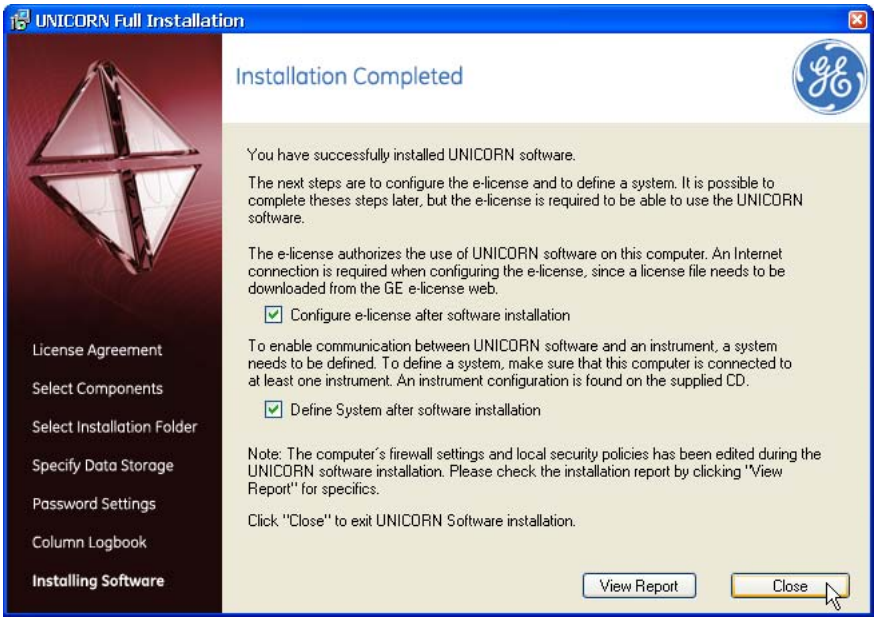
| Step | Action |
|---|---|
| 2 | Click the ***Install*** button.<br>*Result:* The UNICORN 6.1 installation begins. |




**Tip:** Under the Windows ***Start:Programs:GE Healthcare*** menu you will find ***Change Installation Settings***. This program can be used to edit the column logbook settings after the installation.

## Step 8 - Installation completed

The final wizard dialog shown below opens when the installation is complete and the UNICORN 6.1 database, e-license server, software client and instrument server are all installed on the workstation computer.


UNICORN Full Installation
Installation Completed
You have successfully installed UNICORN software.
The next steps are to configure the e-license and to define a system. It is possible to complete theses steps later, but the e-license is required to be able to use the UNICORN software.
The e-license authorizes the use of UNICORN software on this computer. An Internet connection is required when configuring the e-license, since a license file needs to be downloaded from the GE e-license web.
Configure e-license after software installation
To enable communication between UNICORN software and an instrument, a system needs to be defined. To define a system, make sure that this computer is connected to at least one instrument. An instrument configuration is found on the supplied CD.
Define System after software installation
Note: The computer´s firewall settings and local security policies has been edited during the UNICORN software installation. Please check the installation report by clicking "View Report" for specifics.
Click "Close" to exit UNICORN Software installation.
View Report
Close
License Agreement
Select Components
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software

At this point you may

- select to configure an e-license
- select to define a system

  and/or
- view an installation summary report.

  ***Note:*** *The report can only be displayed at this point. If you proceed with e-license configuration and/or system definition, you will not be able to generate the report later.*

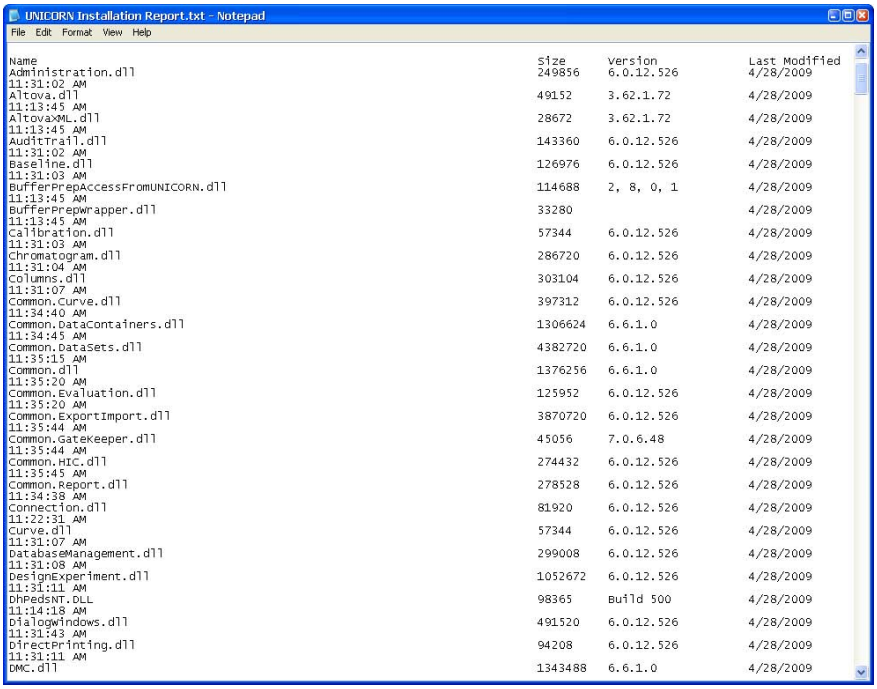
If you have selected to proceed with an e-license configuration and a system definition, first the ***e-License Configuration*** dialog and then the ***Define System*** dialog will automatically open when you click the ***Close*** button, which completes the installation wizard. These dialogs are described in subsequent sections in this chapter.

**Tip:** You may also configure an e-license and define a system later if you so wish. The e-license configuration is described in *Add more e-licenses to the license server, on page 189*, and how to define a system is described in *Section 3.1.3 Define a new system, on page 144*.

## Installation summary report

When the installation is completed you may open an installation report in text format. This report contains a list of all installed files, including size, version and date of creation. The report may be used to verify that the installation is complete and that the correct files are included.

***Note:*** *During the UNICORN installation some of the default Windows firewall settings and local security policies are modified to enable communication between the workstation computer, the ÄKTA avant instrument and the database server. The modified settings are listed at the end of the report.*


UNICORN Installation Report.txt - Notepad

File Edit Format View Help

| Name | Size | Version | Last Modified |
|---|---|---|---|
| Administration.dll | 249856 | 6.0.12.526 | 4/28/2009 |
| 11:31:02 AM | | | |
| Altova.dll | 49152 | 3.62.1.72 | 4/28/2009 |
| 11:13:45 AM | | | |
| AltovaXML.dll | 28672 | 3.62.1.72 | 4/28/2009 |
| 11:13:45 AM | | | |
| AuditTrail.dll | 143360 | 6.0.12.526 | 4/28/2009 |
| 11:31:02 AM | | | |
| Baseline.dll | 126976 | 6.0.12.526 | 4/28/2009 |
| 11:31:03 AM | | | |
| BufferPrepAccessFromUNICORN.dll | 114688 | 2, 8, 0, 1 | 4/28/2009 |
| 11:13:45 AM | | | |
| BufferPrepWrapper.dll | 33280 | | 4/28/2009 |
| 11:13:45 AM | | | |
| Calibration.dll | 57344 | 6.0.12.526 | 4/28/2009 |
| 11:31:03 AM | | | |
| Chromatogram.dll | 286720 | 6.0.12.526 | 4/28/2009 |
| 11:31:04 AM | | | |
| Columns.dll | 303104 | 6.0.12.526 | 4/28/2009 |
| 11:31:07 AM | | | |
| Common.Curve.dll | 397312 | 6.0.12.526 | 4/28/2009 |
| 11:34:40 AM | | | |
| Common.DataContainers.dll | 1306624 | 6.6.1.0 | 4/28/2009 |
| 11:34:45 AM | | | |
| Common.DataSets.dll | 4382720 | 6.6.1.0 | 4/28/2009 |
| 11:35:15 AM | | | |
| Common.dll | 1376256 | 6.6.1.0 | 4/28/2009 |
| 11:35:20 AM | | | |
| Common.Evaluation.dll | 125952 | 6.0.12.526 | 4/28/2009 |
| 11:35:20 AM | | | |
| Common.ExportImport.dll | 3870720 | 6.0.12.526 | 4/28/2009 |
| 11:35:44 AM | | | |
| Common.GateKeeper.dll | 45056 | 7.0.6.48 | 4/28/2009 |
| 11:35:44 AM | | | |
| Common.HIC.dll | 274432 | 6.0.12.526 | 4/28/2009 |
| 11:35:45 AM | | | |
| Common.Report.dll | 278528 | 6.0.12.526 | 4/28/2009 |
| 11:34:38 AM | | | |
| Connection.dll | 81920 | 6.0.12.526 | 4/28/2009 |
| 11:22:31 AM | | | |
| Curve.dll | 57344 | 6.0.12.526 | 4/28/2009 |
| 11:31:07 AM | | | |
| DatabaseManagement.dll | 299008 | 6.0.12.526 | 4/28/2009 |
| 11:31:08 AM | | | |
| DesignExperiment.dll | 1052672 | 6.0.12.526 | 4/28/2009 |
| 11:31:11 AM | | | |
| DhPedsNT.DLL | 98365 | Build 500 | 4/28/2009 |
| 11:14:18 AM | | | |
| DialogWindows.dll | 491520 | 6.0.12.526 | 4/28/2009 |
| 11:31:43 AM | | | |
| DirectPrinting.dll | 94208 | 6.0.12.526 | 4/28/2009 |
| 11:31:11 AM | | | |
| DMC.dll | 1343488 | 6.6.1.0 | 4/28/2009 |

# 2.3.2 Configure an e-license

## Introduction

This section describes how to configure an e-license as part of a UNICORN 6.1 installation. If you are configuring e-licenses for a common license server in a network, you will retrieve a block of licenses using the procedure described below.

You can access the configuration dialog at a later time to perform the steps described below. The dialog is available from the Windows ***Start:All programs*** menu under the heading GE Healthcare. Choose ***UNICORN:Configuration Tools:Configure e-license***.

---

## Before you start

### Access Code

Before you can retrieve an e-license from the GE Healthcare software e-licensing web site, you must have received an ***Access Code*** with your software or via courier mail. Without this code you will not be able to configure the e-license. Contact your GE Healthcare representative if you have not received the code.

### Internet connection

To activate the e-license, you must have access to the Internet. If you are configuring the e-license for a stand-alone workstation with no external network access, retrieve the e-license file using another computer and then move the file to the workstation computer using, for example, a USB memory stick.

### Computer Ethernet address

You will need the Ethernet address for the computer where the license server is installed (i.e. either a stand-alone workstation or a database and license server) when you perform the actions described in this section. This address is shown in the ***Configure e-license*** dialog.

***Note:*** *The displayed address should be the Ethernet address for the Network Interface Card (NIC) which is used for the communication with the ÄKTA avant instrument, and not the address for a second interface card used for network communication. If the computer is equipped with two interface cards you may need to verify the Ethernet address.*

*This is described below.*

| Step | Action |
|---|---|
| 1 | • Open a ***Command Prompt*** window[2]<br>and<br>• enter the command ipconfig/all to display the Ethernet addresses. |
| 2 | Locate the Network Interface Card (also called Ethernet adapter) with the ***IP Address 10.1.1.2***. This is the Network Interface Card which is used for instrument communication. |
| 3 | The Ethernet address for this card is listed as the ***Physical Address***. Verify that this is address shown in the ***Configure e-license*** dialog. |

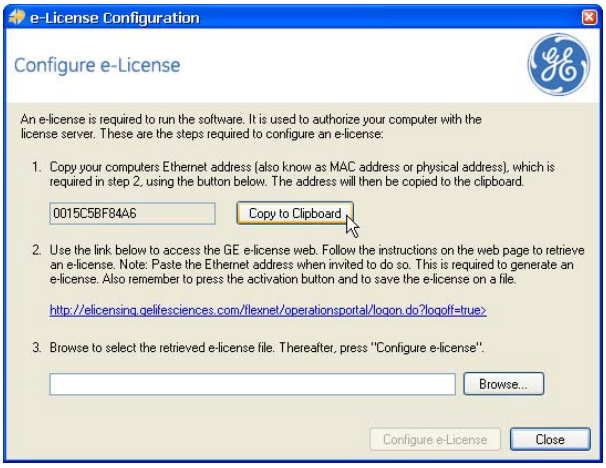
## Initiate the e-license configuration

After completing a UNICORN installation, you can choose to proceed to configure e-licenses for the installation. The table below describes how to perform the final installation step and initiate the e-license configuration.

| Step | Action |
|---|---|
| 1 | Perform the UNICORN installation wizard sequence until you reach the final, ***Installation Completed*** dialog. |
| 2 | Select the ***Configure e-license after software installation*** checkbox in the dialog. |

2 In Windows XP, click the ***Start*** button and choose ***Programs:Accessories:Command Prompt***.
In Windows 7, click the Windows icon and choose ***All Programs:Accessories:Command Prompt***.
You can also press and hold the Windows key and then press the letter **R**. Type ***cmd*** in the input field and click ***OK*** or press **Enter**.

| Step | Action |
|---|---|
| 3 | Click the ***Close*** button to exit the software installation sequence.<br>*Result:* The ***Configure e-License*** dialog opens. |


e-License Configuration
Configure e-License
An e-license is required to run the software. It is used to authorize your computer with the license server. These are the steps required to configure an e-license:
1. Copy your computers Ethernet address (also know as MAC address or physical address), which is required in step 2, using the button below. The address will then be copied to the clipboard.
0015C5BF84A6
Copy to Clipboard
2. Use the link below to access the GE e-license web. Follow the instructions on the web page to retrieve an e-license. Note: Paste the Ethernet address when invited to do so. This is required to generate an e-license. Also remember to press the activation button and to save the e-license on a file.
http://elicensing.gelifesciences.com/flexnet/operationsportal/logon.do?logoff=true>
3. Browse to select the retrieved e-license file. Thereafter, press "Configure e-license".
Browse...
Configure e-License
Close

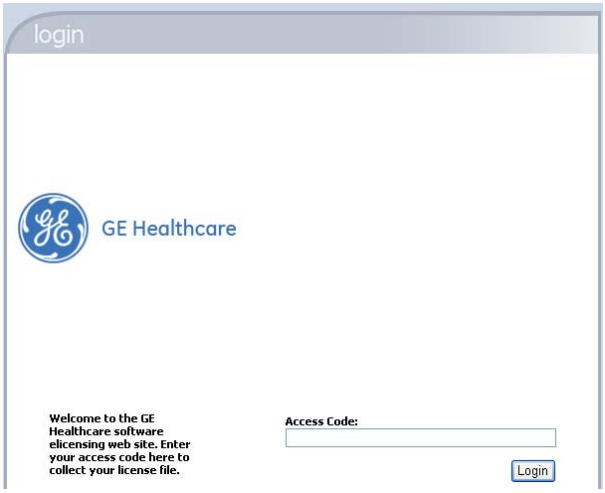
***Note:*** *If you also selected to define a system, the e-licensing configuration must be completed before the system definition can begin.*

| | |
|---|---|
| 4 | • Click the ***Copy to Clipboard*** button to copy the Ethernet address and<br>• click the hyperlink in the dialog to proceed to access the e-licensing web site. |

***Note:*** *When activating additional licenses, it is essential to always use the Ethernet address for the computer where the license server software is installed. You should not use the Ethernet addresses for the additional client computers.*

## Access the e-licensing web site

You must retrieve the e-license from the GE Healthcare e-licensing web site. The table below describes how to access the site from the configuration dialog.

| Step | Action |
|---|---|
| 1 | Click the ***Copy to Clipboard*** button in the ***e-License Configuration*** dialog.<br>• This will copy the Ethernet address from the computer (shown in the adjacent field), which will be used in subsequent steps. |
| 2 | Click the hyperlink in the configuration dialog.<br>*Result:* The ***GE Healthcare software elicensing web site*** opens in your web browser.<br>  |
| 3 | Type the ***Access Code*** and click the ***Login*** button.<br>*Result:* The ***Operations Portal*** opens. |

## Retrieve the e-license

The table below describes how to retrieve the e-license from the web site.

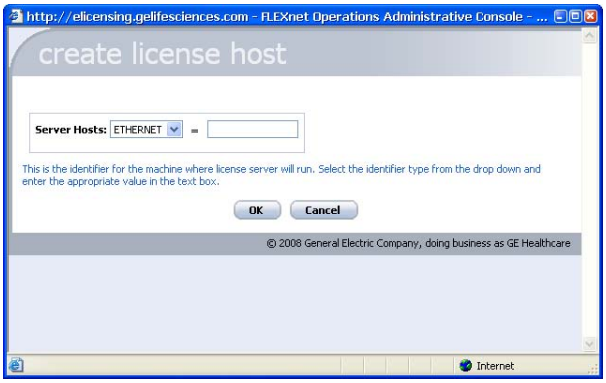
| Step | Action |
|---|---|
| 1 | Click the ***Collect License*** hyperlink. |

*Result:* The ***Manage Entitlements*** page opens.

| | |
|---|---|
| 2 | Select the checkbox for your license and click the ***Activate*** button. |

*Result:* A ***Manage Entitlements*** data input page opens.

| Step | Action |
|---|---|
| 3 | Enter the data below:<br>• Start date, if requested by the GE Healthcare software e-licensing web site.<br>• Customer data:<br>- Name<br>- Department<br>- Organization<br>- Order Email<br>You must also note if you want software updates and information about related products or not. All items marked with red dots are mandatory.<br>• Click the ***Next*** button to proceed to the next page.<br>***Note:*** *The options **Ship to Email** or **Ship to Address** can be selected if, for some reason, the e-license cannot be saved to a file during the configuration. Normally, this will not be necessary.* |
| 4 | Under the heading ***Server Hosts***, click the ***Add New Host*** button.<br>*Result:* The ***Create License Host*** dialog opens. |


http://elicensing.gelifesciences.com - FLEXnet Operations Administrative Console - ...
create license host
Server Hosts:
ETHERNET
This is the identifier for the machine where license server will run. Select the identifier type from the drop down and enter the appropriate value in the text box.
OK
Cancel
© 2008 General Electric Company, doing business as GE Healthcare
Internet

| Step | Action |
|---|---|
| 5 | Click in the empty ***Server Hosts*** field and press the **Ctrl** and **V** keys simultaneously to paste your Ethernet address from the clipboard into this field.<br>***Note:*** *If you use another computer to retrieve the e-license, you must write down the Ethernet address from the computer you are installing UNICORN on and type this address in the* ***Server Hosts*** *field.*<br>*Also, if UNICORN identified the wrong Ethernet address (e.g. from a second network interface card) in the* ***Configure e-License*** *dialog, you must find the correct address and type it in manually.*<br>*This is described in Computer Ethernet Address above.*<br>Click the ***OK*** button to proceed.<br>*Result:* Your computer address is added to the ***Server Hosts*** list. |
| 6 | Select the checkbox for your computer address and click the ***Next*** button.<br>*Result:* The ***Configure Counts*** page opens. |
| 7 | Read to verify that the information is correct and click ***Next*** to proceed.<br>*Result:* The ***Generate Licenses - Review*** page opens. |
| 8 | If the displayed information is correct, click the ***Generate*** button.<br>*Result:* The ***License summary*** page opens. |
| 9 | Select the checkbox for your license and click the ***Save to File*** button.<br>*Result:* A download dialog opens. Save the license file in a temporary folder or on your Windows desktop. |
| 10 | Click the ***Complete*** button and ***Logout*** to close the GE Healthcare software e-licensing web site. |

## Locate and connect the e-license

The table below describes how to connect and confirm the e-license in the UNICORN ***e-License Configuration*** dialog.

| Step | Action |
|---|---|
| 1 | • Click the ***Browse*** button to locate the license file<br>and<br>• click the ***Open*** button to add the search path to the file in the ***e-License Configuration*** dialog. |
| 2 | Click the ***Configure e-License*** button.<br>*Result:* A confirmation dialog opens, showing that the configuration has been successful. |
| 3 | Click ***OK*** in the confirmation dialog, and ***Close*** in the configuration dialog to complete the process. |

# 2.3.3 Define a system at installation

## Instruction

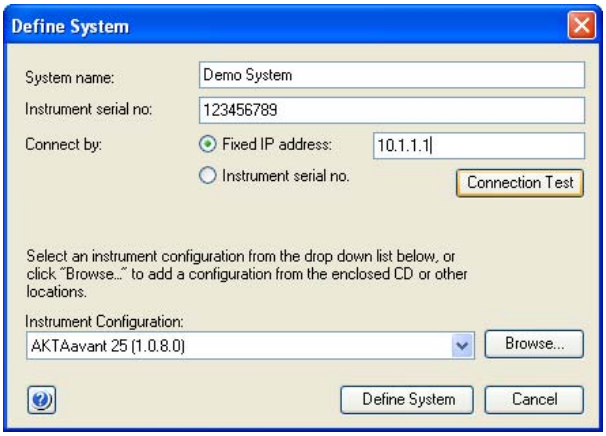
After completing a UNICORN client installation, you can choose to proceed to define a system if the computer is to be used as an instrument server for a locally connected ÄKTA avant instrument. This is described in the table below.

**Tip:** You can also define a system at a later time. This is described in *Section 3.1.3 Define a new system, on page 144*.

***Note:*** *If you also selected to configure an e-license you must first complete that process before you can define a system.*

***Note:*** *To enable connection tests, the ÄKTA avant instrument should be turned on during the system definition.*

| Step | Action |
|---|---|
| 1 | • Select the ***Define system after software installation*** checkbox in the last installation wizard dialog<br>and<br>• Click the ***Close*** button.<br>*Result:* The ***Define System*** dialog opens.<br>(If you also selected to configure an e-license, this process will start first) |




***Note:*** *Before defining the system, ensure that the cable between instrument and the correct network interface card is connected properly.*

| Step | Action |
|---|---|
| 2 | Enter a name in the ***System name*** field.<br>***Note:*** *The system name cannot be changed or edited after the system has been defined.* |
| 3 | Enter the serial number for the instrument in the ***Instrument serial no*** field. You will find this number on the labels either on the inside of the swing-out toolbox or on the back of the instrument.<br>**Tip:** You can also retrieve the serial number of the instrument by entering the IP address and make a connection test as described below. If the connection test is successful, the serial number will be entered automatically. |
| 4 | Select how the instrument shall be identified for connections:<br>• Enter the default ***Fixed IP address*** for the instrument (10.1.1.1).<br>***Note:*** *Fixed IP address should always be used for instrument identification. The default address shown above should be used whenever the instrument is connected using a dedicated network interface card.*<br>*Serial numbers should only be used for instrument identification in very specific situations. Contact GE Healthcare Service for advice if there are reasons to investigate if IP address cannot be used or if the instrument will not be connected using a dedicated network interface card.* |
| 5 | Click the ***Connection Test*** button.<br>*Result:* The connection between the instrument server local station and the instrument is verified.<br>**Tip:** If the connection fails, check that the ***Default Gateway*** address in the ÄKTA avant instrument settings corresponds to the default instrument server IP address. The ***Default Gateway*** address is shown on the ÄKTA avant instrument display, on the ***Settings*** page. |

| Step | Action |
|---|---|
| 6 | Select the appropriate instrument configuration from the ***Instrument Configuration*** droplist menu.<br>The list includes all instrument configurations currently in the UNICORN database. To select a new instrument configuration:<br>• Insert the instrument configuration CD in your CD-ROM drive.<br>• Click the ***Browse*** button and navigate to the configuration file on the CD.<br>• Select the appropriate configuration file. |
| 7 | Click the ***Define System*** button.<br>*Result:* The system definition settings are saved and the new system is made available as an active system. |

# 2.4 Network installation and configuration

## Introduction

This section describes how to install the UNICORN 6.1 for server and client computers in a network deployment. It also describes basic configuration of the server and client computers.

## Contents

This section contains the following topics:


| Section | See page |
|---|---|
| 2.4.1 Install a UNICORN database and license server | 57 |
| 2.4.2 Configure an e-license | 70 |
| 2.4.3 Configure the network | 78 |
| 2.4.4 Configure and set up the client computers | 81 |
| 2.4.5 Install the UNICORN 6.1 Client/Instrument server software | 88 |
| 2.4.6 Define a system at installation | 98 |

# 2.4.1 Install a UNICORN database and license server

## Introduction

The ***Custom Installation*** option is used to install a UNICORN 6.1 database and the license server application necessary to authenticate licenses and host data for a number of UNICORN client stations in a network deployment.

The database is a Microsoft SQL Server database. The standard database software supplied with the UNICORN 6.1 installation is Microsoft SQL Server Express. This server software is suitable for small workgroups consisting of two to three client stations. Contact your GE Healthcare representative to discuss other options if you need a larger installation.

The database and license server installation is the first part of the set up of a UNICORN 6.1 network.

## Step 1 - Insert the installation DVD

Follow the instructions in the table below to begin the installation:

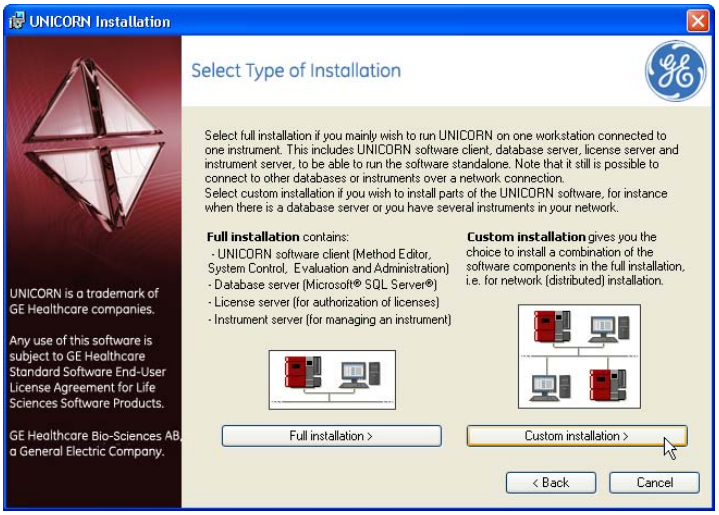
| Step | Action |
|---|---|
| 1 | Insert the installation DVD in your DVD drive.<br>*Result:* The UNICORN Installation wizard opens with a welcome dialog.<br>**Tip:** If the DVD drive is not set up to allow automatic start, browse the DVD contents and doubleclick the file UNICORNSetup.exe to initiate the installation. |
| 2 | Click the ***Start*** button. |
| 3 | The UNICORN Installation Program is launched. Continue the installation below. |

UNICORN Installation
UNICORN is a trademark of GE Healthcare companies.
Any use of this software is subject to GE Healthcare Standard Software End-User License Agreement for Life Sciences Software Products.
GE Healthcare Bio-Sciences AB, a General Electric Company.
UNICORN™ Software Installation
Welcome to the UNICORN™ software installation program. This program will support you with installation of the UNICORN control software. Follow the instructions in every step of the installation. When the installation is completed, you may configure the e-license and define a system, this will require an internet connection and that the instrument is physically connected.
Start >
Close

**Tip:** You can exit the installation at any point by clicking either the ***Close*** or, in subsequent wizard steps, the ***Cancel*** button. However, if you do this the installation will be incomplete and the software cannot be used. You may also click the ***Back*** button in any installation step to return to a previous step to change selections.

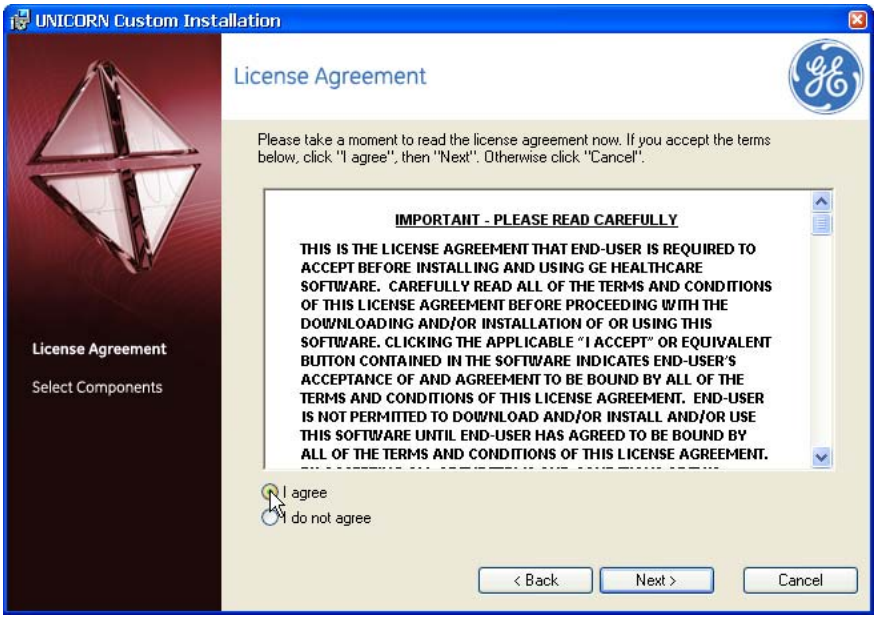
## Step 2 - Select type of installation

In the second step of the installation you decide what kind of installation you want to make:

| Step | Action |
|---|---|
| 1 | Select the installation type:<br>• ***Full installation***<br>which includes all the UNICORN software necessary for stand-alone operation. (This installation option is described in *Section 2.3.1 Install the UNICORN software - Full installation, on page 33*)<br>or<br>• ***Custom installation***<br>which allows you to install selected components.<br>  |
| 2 | Click the ***Custom installation*** button to proceed with this option, for a server installation. |

## Step 3 - License agreement

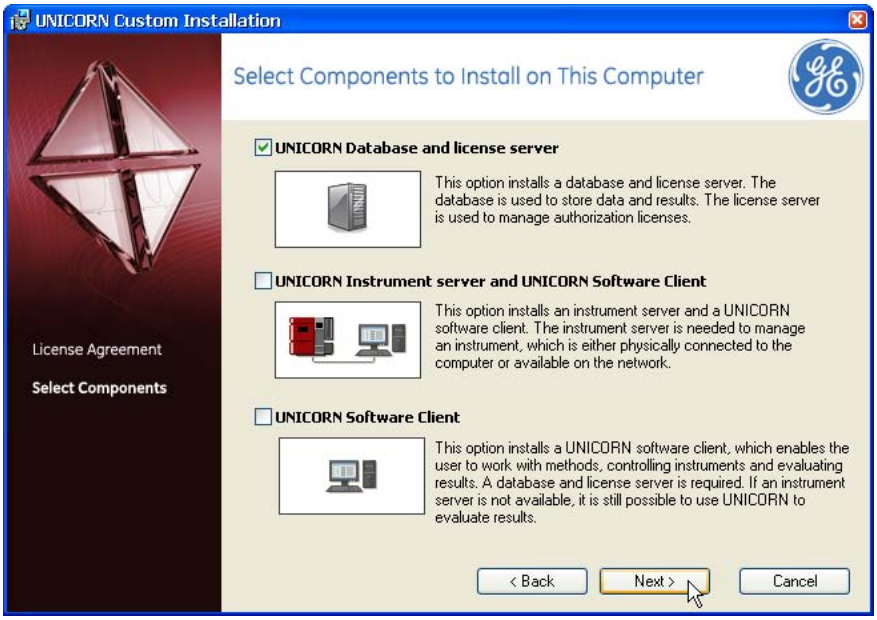
The next installation step shows the UNICORN 6.1 License Agreement text.


UNICORN Custom Installation
License Agreement
Select Components
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I agree", then "Next". Otherwise click "Cancel".
IMPORTANT - PLEASE READ CAREFULLY
THIS IS THE LICENSE AGREEMENT THAT END-USER IS REQUIRED TO ACCEPT BEFORE INSTALLING AND USING GE HEALTHCARE SOFTWARE. CAREFULLY READ ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT BEFORE PROCEEDING WITH THE DOWNLOADING AND/OR INSTALLATION OF OR USING THIS SOFTWARE. CLICKING THE APPLICABLE "I ACCEPT" OR EQUIVALENT BUTTON CONTAINED IN THE SOFTWARE INDICATES END-USER'S ACCEPTANCE OF AND AGREEMENT TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT. END-USER IS NOT PERMITTED TO DOWNLOAD AND/OR INSTALL AND/OR USE THIS SOFTWARE UNTIL END-USER HAS AGREED TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT.
I agree
I do not agree
< Back
Next >
Cancel

| Step | Action |
|---|---|
| 1 | Read the license agreement carefully. |
| 2 | Select the ***I agree*** option. |
| 3 | Click the ***Next*** button to proceed. |

## Step 4 - Select software components

Select the software components to install:

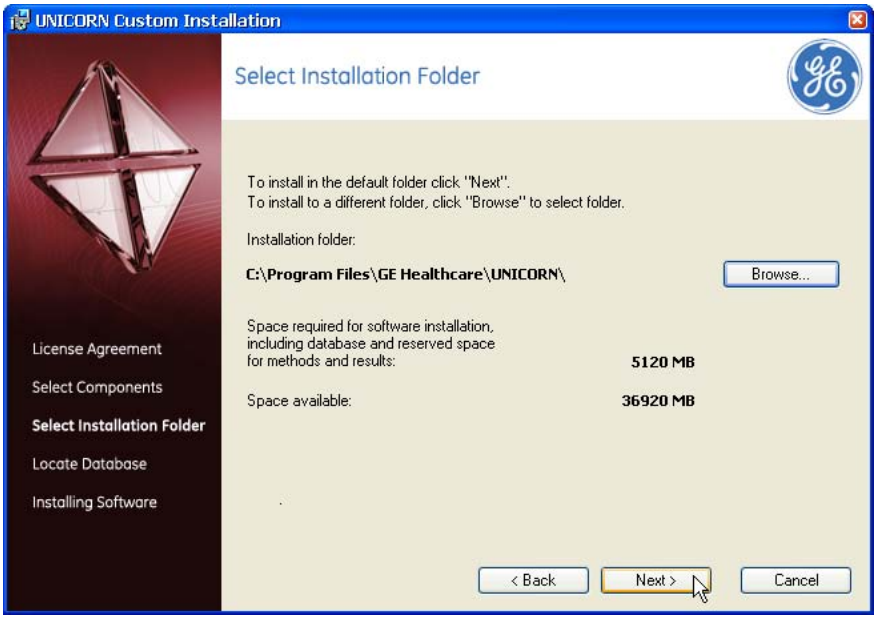

UNICORN Custom Installation
Select Components to Install on This Computer
License Agreement
Select Components
UNICORN Database and license server
This option installs a database and license server. The database is used to store data and results. The license server is used to manage authorization licenses.
UNICORN Instrument server and UNICORN Software Client
This option installs an instrument server and a UNICORN software client. The instrument server is needed to manage an instrument, which is either physically connected to the computer or available on the network.
UNICORN Software Client
This option installs a UNICORN software client, which enables the user to work with methods, controlling instruments and evaluating results. A database and license server is required. If an instrument server is not available, it is still possible to use UNICORN to evaluate results.
< Back
Next >
Cancel

| Step | Action |
|---|---|
| 1 | Choose ***UNICORN Database and license server***. |
| 2 | Click the ***Next*** button to proceed. |

***Note:*** *You can also select to install a software client or an instrument server/software client at the same time if you so wish. It may be useful to have UNICORN client software installed locally on the server, for example for database maintenance. You can use the database and license server computer as an instrument server as well, but that may impact the performance for all clients that access this database.*

## Step 5 - Select installation folder

Select the installation folder for UNICORN:

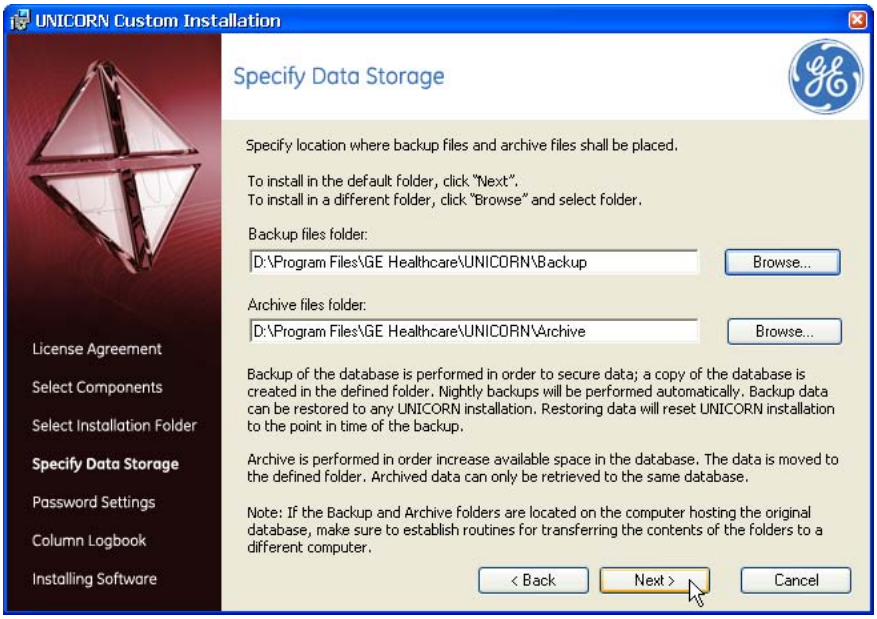



| Step | Action |
|---|---|
| 1 | By default, UNICORN will suggest the following installation folder:<br>***C:\Program Files\GE Healthcare\UNICORN***<br>Either<br>• accept this installation folder<br>or<br>• click ***Browse*** and locate the folder you want to install in.<br>***Note:*** *UNICORN will calculate the available diskspace for the selected installation folder. The space required for the installation is also shown.*<br>***Note:*** *UNICORN 6.1 cannot be installed on a compressed disk.* |
| 2 | Click the ***Next*** button to proceed. |

***Note:*** *The general UNICORN installation folder structure will be saved in the folder selected in this step. However, the SQL Server software and e-license server software will be installed on the C drive by default. If the available space for this is insufficient, the installation may fail. The required space will vary depending on what is previously installed on the computer but at least 2 GB should be available to ensure that the installation will be completed correctly.*

## Step 6 - Specify data storage

Specify storage folders for database backups and for archived database items.


UNICORN Custom Installation
Specify Data Storage
Specify location where backup files and archive files shall be placed.
To install in the default folder, click "Next".
To install in a different folder, click "Browse" and select folder.
Backup files folder:
D:\Program Files\GE Healthcare\UNICORN\Backup
Browse...
Archive files folder:
D:\Program Files\GE Healthcare\UNICORN\Archive
Browse...
Backup of the database is performed in order to secure data; a copy of the database is created in the defined folder. Nightly backups will be performed automatically. Backup data can be restored to any UNICORN installation. Restoring data will reset UNICORN installation to the point in time of the backup.
Archive is performed in order increase available space in the database. The data is moved to the defined folder. Archived data can only be retrieved to the same database.
Note: If the Backup and Archive folders are located on the computer hosting the original database, make sure to establish routines for transferring the contents of the folders to a different computer.
< Back
Next >
Cancel
License Agreement
Select Components
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software

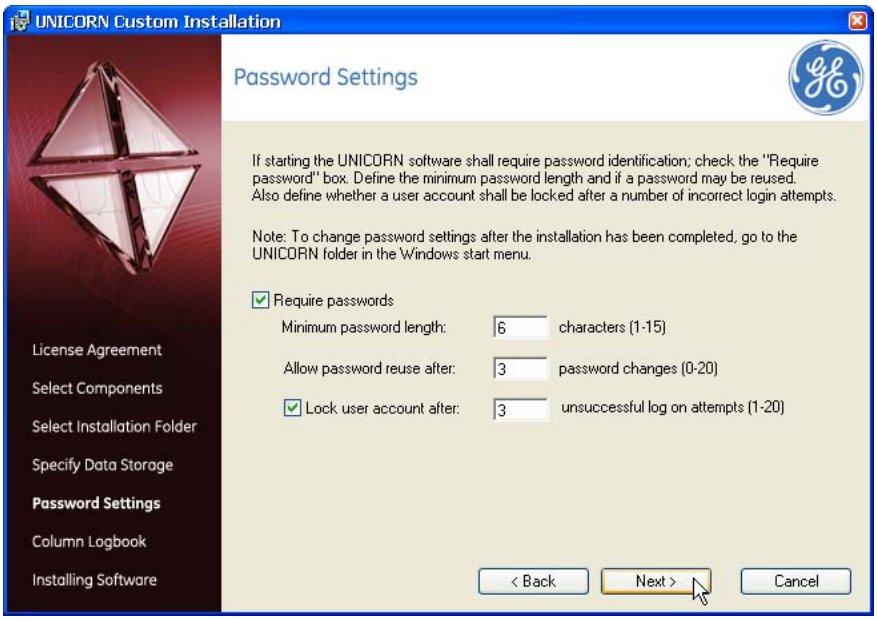
| Step | Action |
|---|---|
| 1 | Click the ***Browse*** button adjacent to the ***Backup files folder*** field and navigate to a suitable folder where the database backups should be saved.<br>***Note:*** *By default UNICORN will suggest a* ***Backup*** *folder in the selected installation folder. However, if possible it is recommended that the backups are saved on another physical drive than where the active database is stored. This physical drive must be installed on the database server, for example a* ***D*** *drive as illustrated above. Network folders can not be used for this purpose.*<br>***Note:*** *Ensure that the generic user "SYSTEM" has access rights to the selected backup folder. This can be verified in the* ***Security*** *tab of the* ***Properties*** *dialog for the folder.* |
| 2 | Click the ***Browse*** button adjacent to the ***Archive files folder*** field and navigate to a suitable folder where the data should be archived.<br>***Note:*** *By default UNICORN will suggest a* ***Archive*** *folder in the selected installation folder. However, if possible it is recommended that the archives are saved on another physical drive than where the active database is stored. This physical drive must be installed on the database server. Network folders can not be used for this purpose.*<br>***Note:*** *Ensure that the user "SYSTEM" has access rights to the selected archive folder. Right-click the folder and open* ***Properties:Security*** *to verify this.* |
| 3 | Click the ***Next*** button to proceed. |

***Note:*** *To ensure data safety, it is recommended that the backup and the archive folders are copied or moved at regular intervals to another server computer or some other storage media.*

## Step 7 - Password settings

Choose the password settings you wish to apply for the UNICORN 6.1 network.

***Note:*** *These settings will be applied to all client stations sharing this database server.*


UNICORN Custom Installation
Password Settings
If starting the UNICORN software shall require password identification; check the "Require password" box. Define the minimum password length and if a password may be reused.
Also define whether a user account shall be locked after a number of incorrect login attempts.
Note: To change password settings after the installation has been completed, go to the UNICORN folder in the Windows start menu.
Require passwords
Minimum password length: 6 characters (1-15)
Allow password reuse after: 3 password changes (0-20)
Lock user account after: 3 unsuccessful log on attempts (1-20)
License Agreement
Select Components
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software
< Back
Next >
Cancel

| Step | Action |
|---|---|
| 1 | By default, the ***Require passwords*** option is selected.<br>• If passwords should be used, proceed with step 2.<br>• If you do not want to use passwords at log on or for electronic signatures, de-select this option and proceed with step 5 in this instruction. |
| 2 | Enter the minimum number of characters required for the password (Between 1 and 15 characters).<br>**Tip:** Recommendations for how passwords should be set up are listed in *Section 3.2.5 User passwords and account access limitations, on page 180*. |
| 3 | Enter the number of times the passwords must be changed before an identical password may be used again.<br>• In the example illustration above, the password must be changed three times before the first password may be used again. |
| 4 | Select if user accounts shall be locked after log on attempts have failed, and enter the number of tries before the account is locked.<br>• In the example illustration above, the user account will be locked after three failed log on attempts. Another user with ***User Setup*** access must reset the passwords before the user account is available again. |

| Step | Action |
|---|---|
| 5 | Click the ***Next*** button to proceed. |

**Tip:** Under the Windows Start:Programs:GE Healthcare menu you will find ***Change Installation Settings***. This dialog can be used to edit the password settings after the installation.

## Step 8 - Column logbook

The ***Column Logbook*** enables the recording of usage and performance history of individual columns.

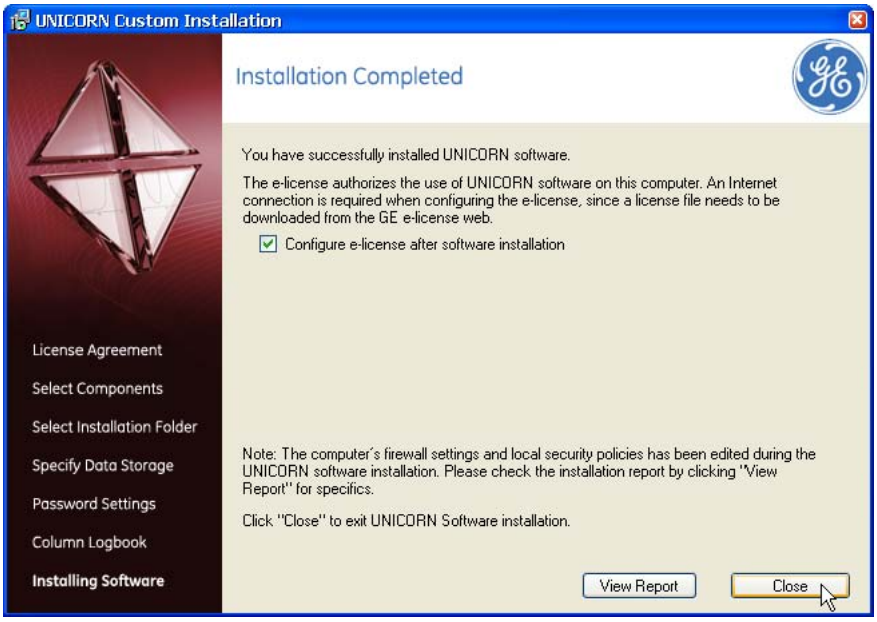
| Step | Action |
|---|---|
| 1 | Click the ***Enable Column Logbook*** checkbox to set up the logbook. This is selected by default. |

| Step | Action |
|---|---|
| 2 | Click the ***Install*** button.<br>*Result:* The UNICORN 6.1 installation begins. |

**Tip:** Under the Windows Start:Programs:GE Healthcare menu you will find ***Change Installation Settings***. This dialog can be used to edit the column logbook settings after the installation.

## Step 9 - Installation completed

The final wizard dialog shown below opens when the installation is complete and the UNICORN 6.1 database and license server software are fully installed on the server computer.


UNICORN Custom Installation
Installation Completed
You have successfully installed UNICORN software.
The e-license authorizes the use of UNICORN software on this computer. An Internet connection is required when configuring the e-license, since a license file needs to be downloaded from the GE e-license web.
Configure e-license after software installation
License Agreement
Select Components
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software
Note: The computer´s firewall settings and local security policies has been edited during the UNICORN software installation. Please check the installation report by clicking "View Report" for specifics.
Click "Close" to exit UNICORN Software installation.
View Report
Close

At this point you may

- select to configure e-licenses

  and/or

- view an installation report.

  ***Note:*** *The report can only be displayed at this point. If you proceed with e-license configuration, you will not be able to generate the report later.*

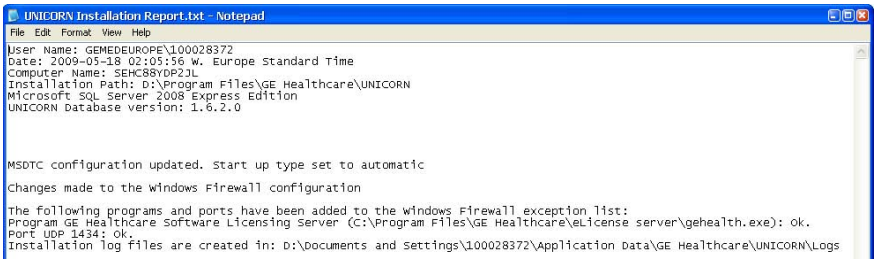
If you have selected to proceed with the e-licenses at this point, the ***e-License Configuration*** dialog will automatically open when you click the ***Close*** button, which completes the installation wizard.

The e-license configuration is described in *Section 2.3.2 Configure an e-license, on page 45*.

## Installation summary report

When the installation is completed you may open an installation report in text format. This report contains a summary of the installation.

***Note:*** *During the UNICORN installation some of the default Windows firewall settings and local security policies are modified to enable communication between client computers, ÄKTA avant instruments and the database server. The modified settings are listed at the end of the report.*


UNICORN Installation Report.txt - Notepad
File Edit Format View Help
User Name: GEMEDEUROPE\100028372
Date: 2009-05-18 02:05:56 W. Europe Standard Time
Computer Name: SEHC88YDP2JL
Installation Path: D:\Program Files\GE Healthcare\UNICORN
Microsoft SQL Server 2008 Express Edition
UNICORN Database version: 1.6.2.0
MSDTC configuration updated. Start up type set to automatic
Changes made to the Windows Firewall configuration
The following programs and ports have been added to the Windows Firewall exception list:
Program GE Healthcare Software Licensing Server (C:\Program Files\GE Healthcare\eLicense server\gehealth.exe): Ok.
Port UDP 1434: Ok.
Installation log files are created in: D:\Documents and Settings\100028372\Application Data\GE Healthcare\UNICORN\Logs

# 2.4.2 Configure an e-license

## Introduction

This section describes how to configure an e-license as part of a UNICORN 6.1 installation. If you are configuring e-licenses for a common license server in a network, you will retrieve a block of licenses using the procedure described below.

You can access the configuration dialog at a later time to perform the steps described below. The dialog is available from the Windows ***Start:All programs*** menu under the heading GE Healthcare. Choose ***UNICORN:Configuration Tools:Configure e-license***.

---

## Before you start

### Access Code

Before you can retrieve an e-license from the GE Healthcare software e-licensing web site, you must have received an ***Access Code*** with your software or via courier mail. Without this code you will not be able to configure the e-license. Contact your GE Healthcare representative if you have not received the code.

### Internet connection

To activate the e-license, you must have access to the Internet. If you are configuring the e-license for a stand-alone workstation with no external network access, retrieve the e-license file using another computer and then move the file to the workstation computer using, for example, a USB memory stick.

### Computer Ethernet address

You will need the Ethernet address for the computer where the license server is installed (i.e. either a stand-alone workstation or a database and license server) when you perform the actions described in this section. This address is shown in the ***Configure e-license*** dialog.

***Note:*** *The displayed address should be the Ethernet address for the Network Interface Card (NIC) which is used for the communication with the ÄKTA avant instrument, and not the address for a second interface card used for network communication. If the computer is equipped with two interface cards you may need to verify the Ethernet address.*

*This is described below.*

| Step | Action |
|---|---|
| 1 | • Open a ***Command Prompt*** window[3]<br>and<br>• enter the command ipconfig/all to display the Ethernet addresses. |
| 2 | Locate the Network Interface Card (also called Ethernet adapter) with the ***IP Address 10.1.1.2***. This is the Network Interface Card which is used for instrument communication. |
| 3 | The Ethernet address for this card is listed as the ***Physical Address***. Verify that this is address shown in the ***Configure e-license*** dialog. |

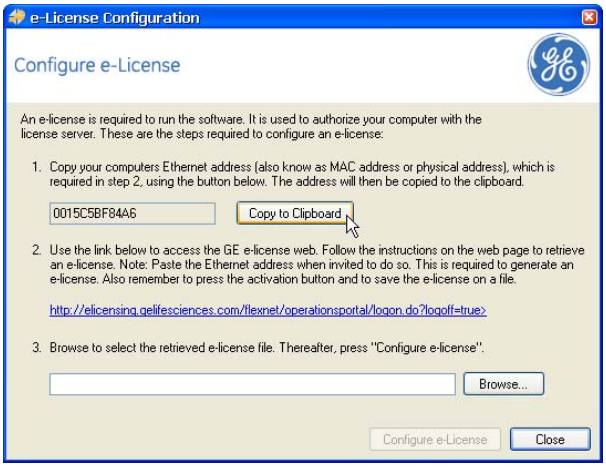
## Initiate the e-license configuration

After completing a UNICORN installation, you can choose to proceed to configure e-licenses for the installation. The table below describes how to perform the final installation step and initiate the e-license configuration.

| Step | Action |
|---|---|
| 1 | Perform the UNICORN installation wizard sequence until you reach the final, ***Installation Completed*** dialog. |
| 2 | Select the ***Configure e-license after software installation*** checkbox in the dialog. |

3 In Windows XP, click the ***Start*** button and choose ***Programs:Accessories:Command Prompt***.
In Windows 7, click the Windows icon and choose ***All Programs:Accessories:Command Prompt***.
You can also press and hold the Windows key and then press the letter **R**. Type ***cmd*** in the input field and click ***OK*** or press **Enter**.

| Step | Action |
|---|---|
| 3 | Click the ***Close*** button to exit the software installation sequence.<br>*Result:* The ***Configure e-License*** dialog opens. |


e-License Configuration
Configure e-License
An e-license is required to run the software. It is used to authorize your computer with the license server. These are the steps required to configure an e-license:
1. Copy your computers Ethernet address (also know as MAC address or physical address), which is required in step 2, using the button below. The address will then be copied to the clipboard.
0015C5BF84A6
Copy to Clipboard
2. Use the link below to access the GE e-license web. Follow the instructions on the web page to retrieve an e-license. Note: Paste the Ethernet address when invited to do so. This is required to generate an e-license. Also remember to press the activation button and to save the e-license on a file.
http://elicensing.gelifesciences.com/flexnet/operationsportal/logon.do?logoff=true>
3. Browse to select the retrieved e-license file. Thereafter, press "Configure e-license".
Browse...
Configure e-License
Close

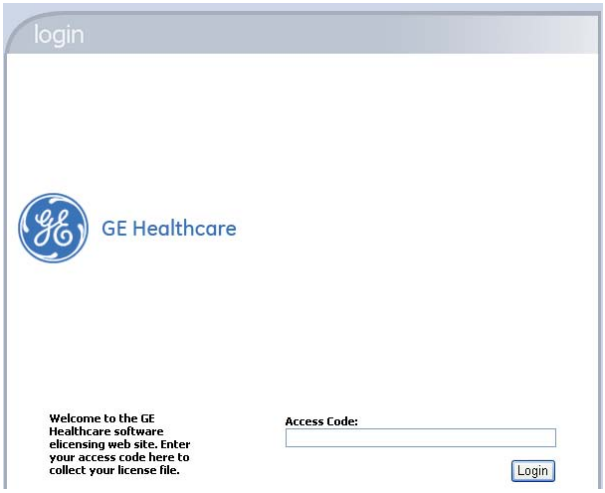
***Note:*** *If you also selected to define a system, the e-licensing configuration must be completed before the system definition can begin.*

| | |
|---|---|
| 4 | • Click the ***Copy to Clipboard*** button to copy the Ethernet address and<br>• click the hyperlink in the dialog to proceed to access the e-licensing web site. |

***Note:*** *When activating additional licenses, it is essential to always use the Ethernet address for the computer where the license server software is installed. You should not use the Ethernet addresses for the additional client computers.*

## Access the e-licensing web site

You must retrieve the e-license from the GE Healthcare e-licensing web site. The table below describes how to access the site from the configuration dialog.

| Step | Action |
|---|---|
| 1 | Click the ***Copy to Clipboard*** button in the ***e-License Configuration*** dialog.<br>• This will copy the Ethernet address from the computer (shown in the adjacent field), which will be used in subsequent steps. |
| 2 | Click the hyperlink in the configuration dialog.<br>*Result:* The ***GE Healthcare software elicensing web site*** opens in your web browser.<br>  |
| 3 | Type the ***Access Code*** and click the ***Login*** button.<br>*Result:* The ***Operations Portal*** opens. |

## Retrieve the e-license

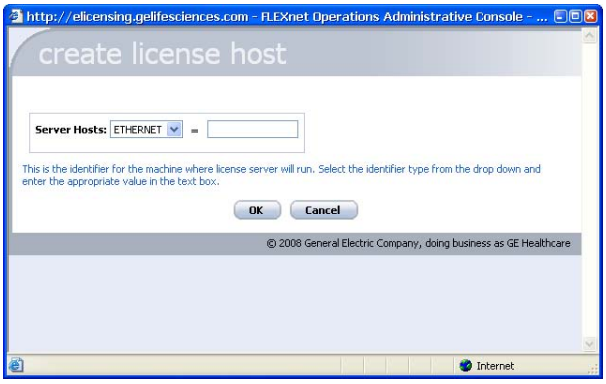
The table below describes how to retrieve the e-license from the web site.

| Step | Action |
|---|---|
| 1 | Click the ***Collect License*** hyperlink. |

*Result:* The ***Manage Entitlements*** page opens.

| | |
|---|---|
| 2 | Select the checkbox for your license and click the ***Activate*** button. |

*Result:* A ***Manage Entitlements*** data input page opens.

| Step | Action |
|---|---|
| 3 | Enter the data below:<br>• Start date, if requested by the GE Healthcare software e-licensing web site.<br>• Customer data:<br>- Name<br>- Department<br>- Organization<br>- Order Email<br>You must also note if you want software updates and information about related products or not. All items marked with red dots are mandatory.<br>• Click the ***Next*** button to proceed to the next page.<br>***Note:*** *The options **Ship to Email** or **Ship to Address** can be selected if, for some reason, the e-license cannot be saved to a file during the configuration. Normally, this will not be necessary.* |
| 4 | Under the heading ***Server Hosts***, click the ***Add New Host*** button.<br>*Result:* The ***Create License Host*** dialog opens.<br>  |

| Step | Action |
|---|---|
| 5 | Click in the empty ***Server Hosts*** field and press the **Ctrl** and **V** keys simultaneously to paste your Ethernet address from the clipboard into this field.<br>***Note:*** *If you use another computer to retrieve the e-license, you must write down the Ethernet address from the computer you are installing UNICORN on and type this address in the* ***Server Hosts*** *field.*<br>*Also, if UNICORN identified the wrong Ethernet address (e.g. from a second network interface card) in the* ***Configure e-License*** *dialog, you must find the correct address and type it in manually.*<br>*This is described in Computer Ethernet Address above.*<br>Click the ***OK*** button to proceed.<br>*Result:* Your computer address is added to the ***Server Hosts*** list. |
| 6 | Select the checkbox for your computer address and click the ***Next*** button.<br>*Result:* The ***Configure Counts*** page opens. |
| 7 | Read to verify that the information is correct and click ***Next*** to proceed.<br>*Result:* The ***Generate Licenses - Review*** page opens. |
| 8 | If the displayed information is correct, click the ***Generate*** button.<br>*Result:* The ***License summary*** page opens. |
| 9 | Select the checkbox for your license and click the ***Save to File*** button.<br>*Result:* A download dialog opens. Save the license file in a temporary folder or on your Windows desktop. |
| 10 | Click the ***Complete*** button and ***Logout*** to close the GE Healthcare software e-licensing web site. |

## Locate and connect the e-license

The table below describes how to connect and confirm the e-license in the UNICORN ***e-License Configuration*** dialog.

| Step | Action |
|---|---|
| 1 | • Click the ***Browse*** button to locate the license file<br>and<br>• click the ***Open*** button to add the search path to the file in the ***e-License Configuration*** dialog. |
| 2 | Click the ***Configure e-License*** button.<br>*Result:* A confirmation dialog opens, showing that the configuration has been successful. |
| 3 | Click ***OK*** in the confirmation dialog, and ***Close*** in the configuration dialog to complete the process. |

# 2.4.3 Configure the network

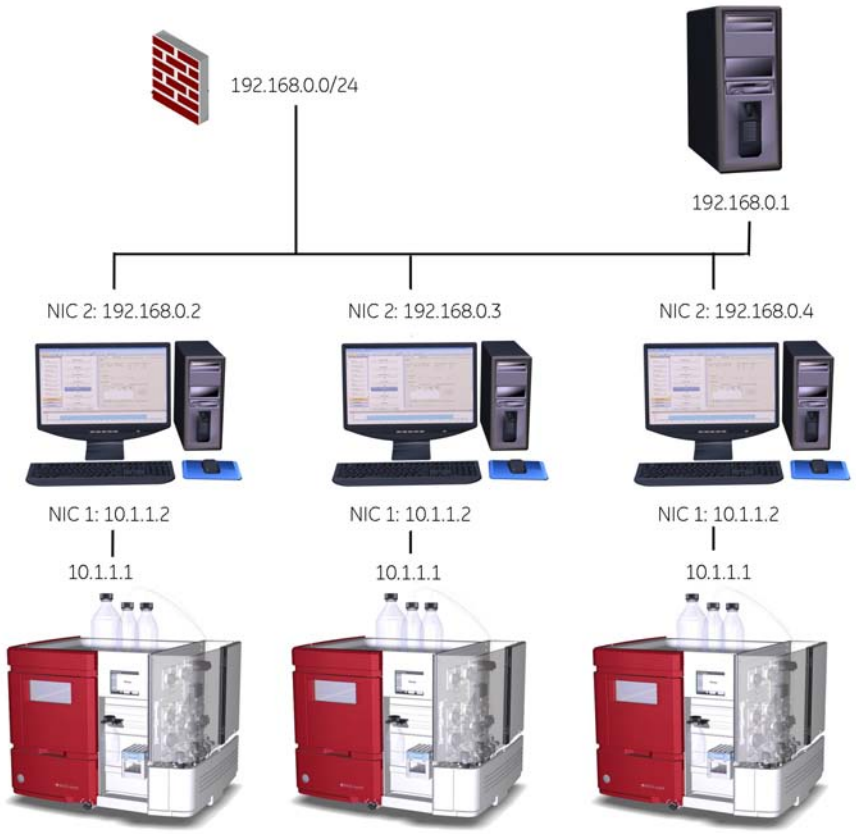
## Introduction

The network environment for UNICORN 6.1 can be set up in many different ways, from a very simple solution for two to three simultaneous users to large scale operations where up to twenty instrument servers share a common database instance. In a larger installation the network can be set up either as Workgroups or Domains. But since the requirements for large scale installations inevitably are different and must be solved on a case by case basis, a model solution cannot be presented in this manual. Additional information necessary for larger installations is available on request from GE Healthcare.

Instead, this section describes a very simple solution for a small network, which is suitable for the number of clients that SQL Server Express is intended for.

## Network illustration

The illustration below shows a small network example:




- The UNICORN network resides on a router, protected from the larger office LAN by a firewall. The router adress range is defined as 192.168.0.0 - 192.168.0.24.
- The *Database and License server* is set up with the static IP adress 192.168.0.1

  (This computer will require a single *Network Interface Card* only)
- Each client station is also an *Instrument server*.
- The *Network Interface Card 2* (NIC 2) for each *Instrument Server* is connected to the router for network communication. The IP adresses are allocated dynamically.
- The *Network Interface Card 1* (NIC 1) for each *Instrument server* is set with the static IP adress 10.1.1.2. This card is connected to the ÄKTA avant instrument in a peer-to-peer connection.

- The IP adresses for the ÄKTA avant instruments are set with the static IP adress 10.1.1.1.

  (This adress is set on delivery, by default)

## Firewall settings

The UNICORN 6.1 installation will configure the Windows Firewall to allow all the network traffic necessary for the communication between the database server and client computers, and for the license authentication. However, if another firewall is used, the ports listed below must be set to allow traffic.

| Port | For application |
|---|---|
| 1433 | SQL server |
| 51723 | License server |

# 2.4.4 Configure and set up the client computers

## Introduction

UNICORN 6.1 client computers delivered from GE Healthcare are set up with dual Network Interface Cards and configured for use as instrument servers in a network environment by default. These computers are ready to be installed following the instructions in the ÄKTA avant and UNICORN 6.1 Installation Guide and will require no additional configurations.

If other computers are used in a network, an extra Network Interface Card must be installed and configured. This is described here.

This section also briefly describes the connections between the client computer and other units. This is explained and illustrated in detail in ÄKTA avant and UNICORN 6.1 Installation Guide.

Finally, the section lists the necessary firewall settings if another firewall than Windows Firewall is used.

Additional information about the client computer configuration and set up is available in *Section B.1 User, client computer and database server set up, on page 250* and in *Appendix C Post installation settings, on page 279*.

---

## Client computer prerequisites

Computers used for UNICORN 6.1 should be set up as listed below before installation:

- Windows XP Professional with Service Pack 3 installed

  or

- Windows 7 Professional installed
- US English language settings
- Screen resolution 1280x1024 or better
- Standard Windows Normal font
- Windows Update disabled

  (using Windows Update may interfere with the instrument server operation during active runs)

- All Windows power save features should be turned off

  (using power save may interfere with the instrument server operation during active runs)

- The Windows basic color scheme is recommended
- The Windows 7 Aero color scheme should not be used

Other computer hardware requirements are listed in *Section A.1 System recommendations, on page 244*.

***Note:*** *It is also strongly recommended to ensure that instrument server computers are not included in automatic software updates (for example of Anti-Virus or other security applications) requiring system restart. A scheduled update with a restart may collide with a method run in progress. A restart would cause the run to stop.*

## Install and configure dual Network Interface Cards

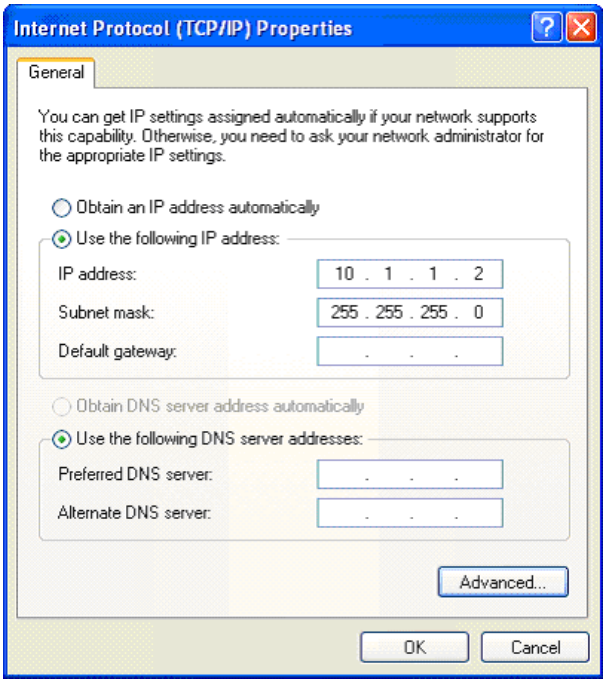
It is possible to operate a UNICORN 6.1 instrument server in a network environment with only a single Network Interface Card. In that case, the ÄKTA avant instrument and the network could be accessed through a switch. This solution is not recommended since any disturbance in the network traffic will have a direct impact on all instruments that are directly connected to the network. By using dual cards and a peer-to-peer connection between instrument server and instrument, the reliability of the instrument operation is independent of other network resources.

The Network Interface Card serving the instrument should also be prioritized to further ensure that the instrument communication is undisturbed. This is described in the instruction below.

| Step | Action |
|---|---|
| 1 | Install the Network Interface Card according to the installation instructions provided by the manufacturer. |
| 2 | Open the Windows ***Control Panel*** (in ***Category View***). |
| 3 | Choose ***Network and Internet Connections***. |
| 4 | Choose ***Network Connections***.<br>*Result:* The ***Network Connections*** dialog opens. |
| 5 | • Right-click the network connection for the Network Interface Card which will be used for the instrument communication and choose ***Rename*** from the shortcut menu..<br>• Rename the network connection ***AKTA***.<br>(This will enable GE Healthcare field service staff to easily identify the dedicated instrument communication card) |

| Step | Action |
|---|---|
| 6 | Choose the ***Advanced:Advanced Settings*** menu item in the ***Network Connections*** dialog.<br>*Result:* The ***Advanced Settings*** dialog opens. |
| 7 | • Select the network connection for the Network Interface Card in the ***Connections*** list in the ***Adapters and Bindings*** tab.<br>• Click the up arrow button to move this network connection to the top of the list.<br> <br>• Click the ***OK*** button to apply the settings and close the ***Advanced Settings*** dialog. |
| 8 | • Double-click the instrument network connection.<br>*Result:* The ***Status*** dialog opens.<br>• Click the ***Properties*** button in the dialog.<br>*Result:* The ***Properties*** dialog opens. |
| 6 | Select ***Internet Protocol (TCP/IP)*** and click the ***Properties*** button.<br>*Result:* The ***Internet Protocol (TCP/IP) Properties*** dialog opens. |

| Step | Action |
|---|---|
| 7 | Select ***Use the following IP address*** and enter<br>• IP address: 10.1.1.2<br>• Subnet mask: 255.255.255.0 |

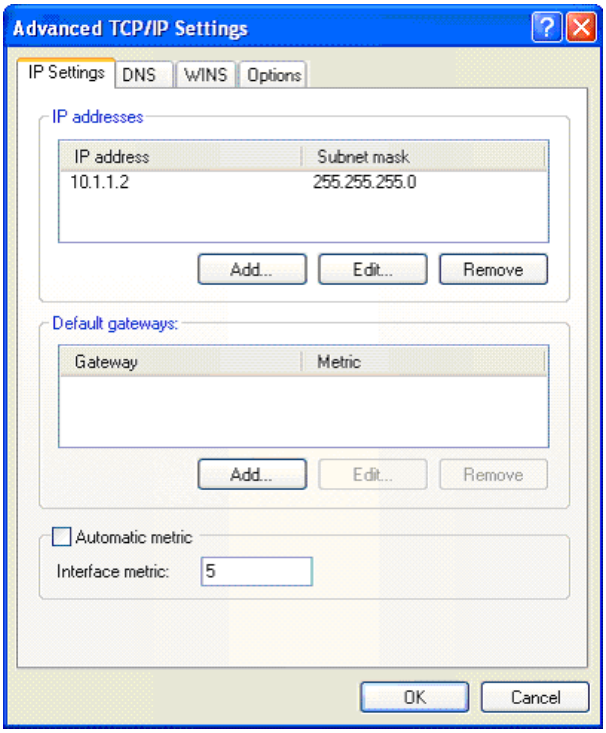

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
10 . 1 . 1 . 2
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

***Note:*** *Do not enter a **Default gateway** in this dialog. If an adress is defined, it should be deleted.*

8 Click the ***Advanced*** button.

*Result:* The ***Advanced TCP/IP Settings*** dialog opens.

| Step | Action |
|---|---|
| 9 | De-select the ***Automatic metric*** checkbox and set the ***Interface metric*** to 5: |




| | |
|---|---|
| 10 | • Click the ***OK*** button to apply the settings and close the ***Advanced TCP/IP Settings*** dialog.<br>• Click the ***OK*** button to close the ***Internet Protocol (TCP/IP) Properties*** dialog.<br>• Click the ***OK*** button to close the ***Properties*** dialog.<br>• Click the ***Close*** button to close the ***Status*** dialog. |
| 11 | Close the ***Network Connections*** dialog. |

***Note:*** *The other Network Interface Card, which is used for network communication, will have the default metric setting 20. This will ensure that the communication between instrument server and instrument will be prioritized.*

## Connect the instrument, network and barcode scanner.

When the Network Interface Cards are properly installed and set up, the instrument server computer can be connected to the instrument and the network.

| Step | Action |
|---|---|
| 1 | Connect an Ethernet cable from the prioritized Network Interface Card to the ÄKTA avant instrument.<br>(On computers delivered from GE Healthcare, the card connector for this card will be marked) |
| 2 | Connect an Ethernet cable from the other Network Interface Card to the network router, or to a network outlet directly connected to the router. |
| 3 | Connect the Barcode Scanner to a USB port on the instrument server computer. |

**Tip:** The instrument connections are described and illustrated in the *"ÄKTA avant and UNICORN 6.1 Installation Guide"*

## Define the default gateway adress for the ÄKTA avant instrument

To enable communication between the instrument server and the ÄKTA avant instrument, the correct default gateway adress must be set on the instrument. This is done on the instrument display, in the **Settings** page. The gateway adress should be the IP adress used by the instrument server Network Interface Card 1, that is 10.1.1.2 by default.

***Note:*** *Ensure that the instrument IP adress is set to a static adress of 10.1.1.1.*

## Firewall settings

The UNICORN 6.1 installation will configure the Windows Firewall to allow all the network traffic necessary for the communication between the instrument server, the database and license server and other client computers. However, if another firewall is used, the ports listed below must be set to allow traffic.

| Port | For application |
|---|---|
| 40501-40502 | Instrument server |

| Port | For application |
|---|---|
| 49152-65535 | Instrument server |
| 135 | DCOM (flow schemes) |

# 2.4.5 Install the UNICORN 6.1 Client/Instrument server software

## Introduction

The UNICORN 6.1 client and instrument server is installed using the Custom installation option. The installation that is described in this section assumes that a UNICORN 6.1 database and license server is already installed and accessible on a network where the client station resides.

## Step 1 - Insert the installation DVD

Follow the instructions in the table below to begin the installation:

| Step | Action |
|---|---|
| 1 | Insert the installation DVD in your DVD drive.<br>*Result:* The UNICORN Installation wizard opens with a welcome dialog.<br>**Tip:** If the DVD drive is not set up to allow automatic start, browse the DVD contents and doubleclick the file UNICORNSetup.exe to initiate the installation. |
| 2 | Click the ***Start*** button. |

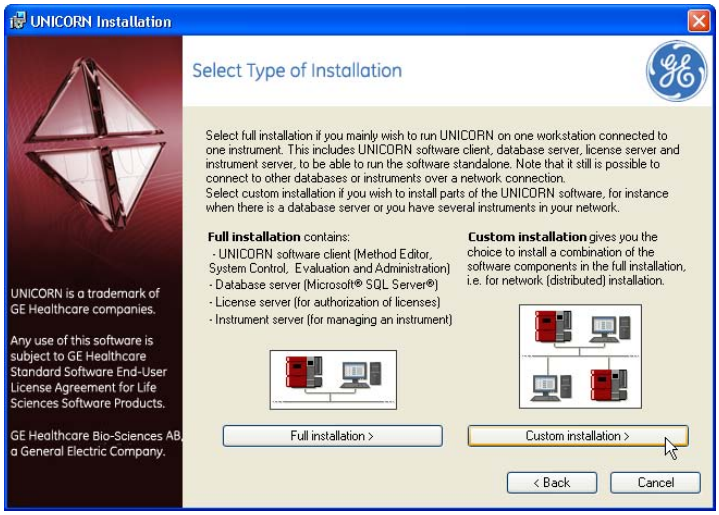
UNICORN Installation
UNICORN is a trademark of GE Healthcare companies.
Any use of this software is subject to GE Healthcare Standard Software End-User License Agreement for Life Sciences Software Products.
GE Healthcare Bio-Sciences AB, a General Electric Company.
UNICORN™ Software Installation
Welcome to the UNICORN™ software installation program. This program will support you with installation of the UNICORN control software. Follow the instructions in every step of the installation. When the installation is completed, you may configure the e-license and define a system, this will require an internet connection and that the instrument is physically connected.
Start >
Close

| Step | Action |
|---|---|
| 3 | The UNICORN Installation Program is launched. Continue the installation below. |

**Tip:** You can exit the installation at any point by clicking either the ***Close*** or, in subsequent wizard steps, the ***Cancel*** button. However, if you do this the installation will be incomplete and the software cannot be used. You may also click the ***Back*** button in any installation step to return to a previous step to change selections.

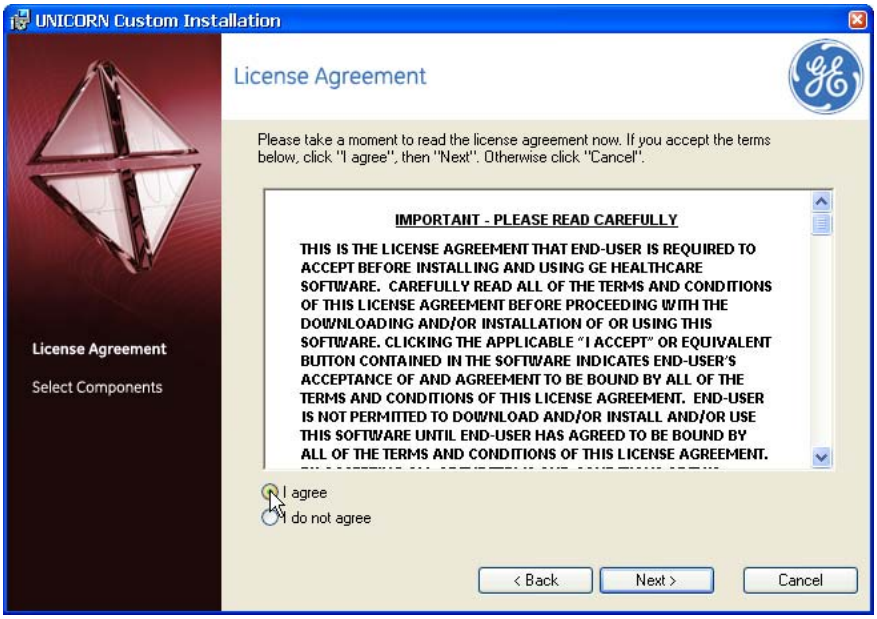
## Step 2 - Select type of installation

In the second step of the installation you decide what kind of installation you want to make:

| Step | Action |
|---|---|
| 1 | Select the installation type:<br>• ***Full installation***<br>which includes all the UNICORN software necessary for stand-alone operation. (This installation option is described in *Section 2.3.1 Install the UNICORN software - Full installation, on page 33*)<br>or<br>• ***Custom installation***<br>which allows you to install selected components.<br>  |
| 2 | Click the ***Custom installation*** button to proceed with this option, for a network client installation. |

## Step 3 - License agreement

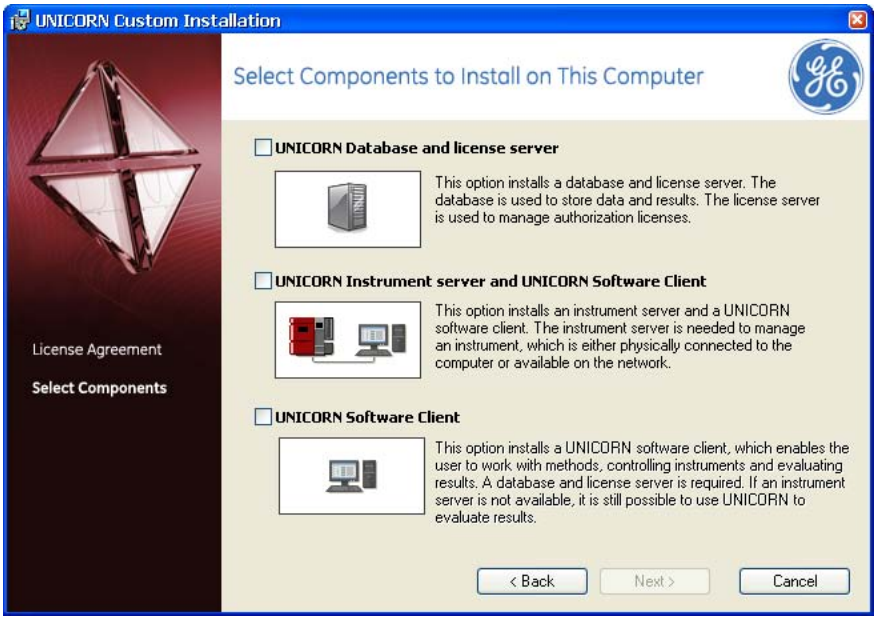
The next installation step shows the UNICORN 6.1 License Agreement text.


UNICORN Custom Installation
License Agreement
Select Components
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I agree", then "Next". Otherwise click "Cancel".
IMPORTANT - PLEASE READ CAREFULLY
THIS IS THE LICENSE AGREEMENT THAT END-USER IS REQUIRED TO ACCEPT BEFORE INSTALLING AND USING GE HEALTHCARE SOFTWARE. CAREFULLY READ ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT BEFORE PROCEEDING WITH THE DOWNLOADING AND/OR INSTALLATION OF OR USING THIS SOFTWARE. CLICKING THE APPLICABLE "I ACCEPT" OR EQUIVALENT BUTTON CONTAINED IN THE SOFTWARE INDICATES END-USER'S ACCEPTANCE OF AND AGREEMENT TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT. END-USER IS NOT PERMITTED TO DOWNLOAD AND/OR INSTALL AND/OR USE THIS SOFTWARE UNTIL END-USER HAS AGREED TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT.
I agree
I do not agree
< Back
Next >
Cancel

| Step | Action |
|---|---|
| 1 | Read the license agreement carefully. |
| 2 | Select the ***I agree*** option. |
| 3 | Click the ***Next*** button to proceed. |

## Step 4 - Select software components

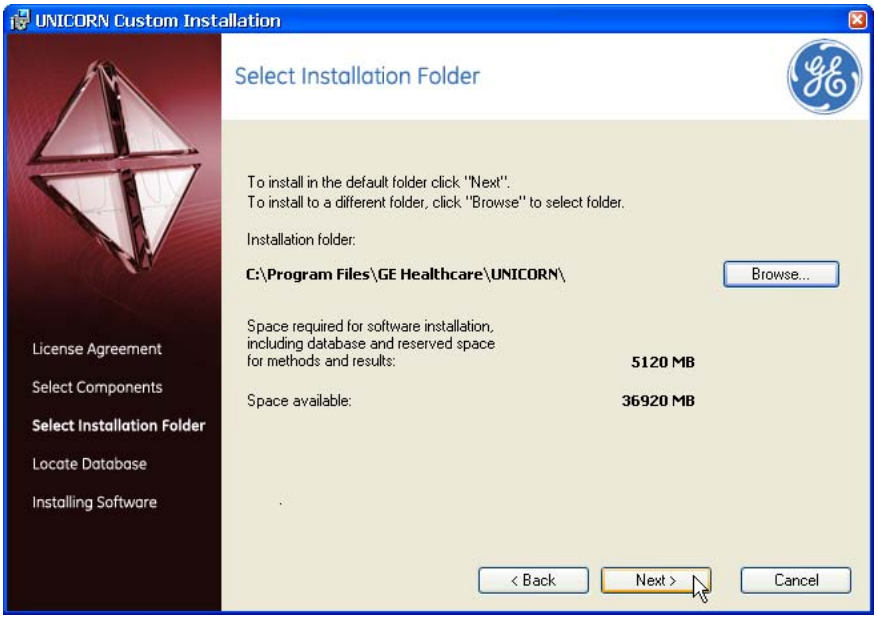
Select the software components to install:


UNICORN Custom Installation
Select Components to Install on This Computer
License Agreement
Select Components
UNICORN Database and license server
This option installs a database and license server. The database is used to store data and results. The license server is used to manage authorization licenses.
UNICORN Instrument server and UNICORN Software Client
This option installs an instrument server and a UNICORN software client. The instrument server is needed to manage an instrument, which is either physically connected to the computer or available on the network.
UNICORN Software Client
This option installs a UNICORN software client, which enables the user to work with methods, controlling instruments and evaluating results. A database and license server is required. If an instrument server is not available, it is still possible to use UNICORN to evaluate results.
< Back
Next >
Cancel

| Step | Action |
|---|---|
| 1 | Choose one of the following options<br>• ***UNICORN Database and license server***<br>(This installation option is described in *Section 2.4.1 Install a UNICORN database and license server, on page 57*)<br>• ***UNICORN Instrument server and UNICORN Software Client***<br>(The installation option described in this section)<br>• ***UNICORN Software Client***<br>(For a remote station only. The installation steps for this option is similar to the combined client and instrument server installation and it will not be described separately in this manual.) |
| 2 | Click the ***Next*** button to proceed. |

## Step 5 - Select installation folder

Select the installation folder for UNICORN:



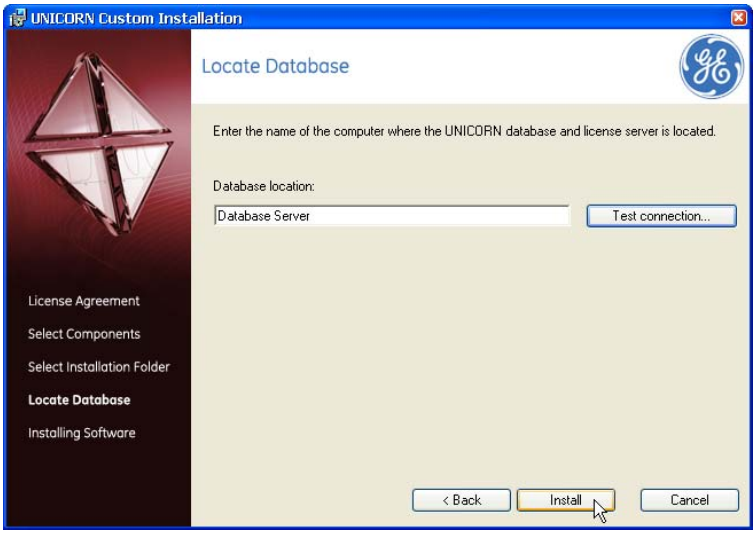

| Step | Action |
|---|---|
| 1 | By default, UNICORN will suggest the following installation folder:<br>***C:\Program Files\GE Healthcare\UNICORN***<br>Either<br>• accept this installation folder<br>or<br>• click ***Browse*** and locate the folder you want to install in.<br>***Note:*** *UNICORN will calculate the available diskspace for the selected installation folder. The space required for the installation is also shown.*<br>***Note:*** *UNICORN 6.1 cannot be installed on a compressed disk.* |
| 2 | Click the ***Next*** button to proceed. |

## Step 6 - Locate database and install

Locate and select the UNICORN database.

***Note:*** *This installation step assumes that you have already installed a database server in the network, according to the instructions in* *Section 2.4.1 Install a UNICORN database and license server, on page 57*.

| Step | Action |
|---|---|
| 1 | Type the database server computer name and (where applicable) the folder where the database is located in the ***Database location*** field: |



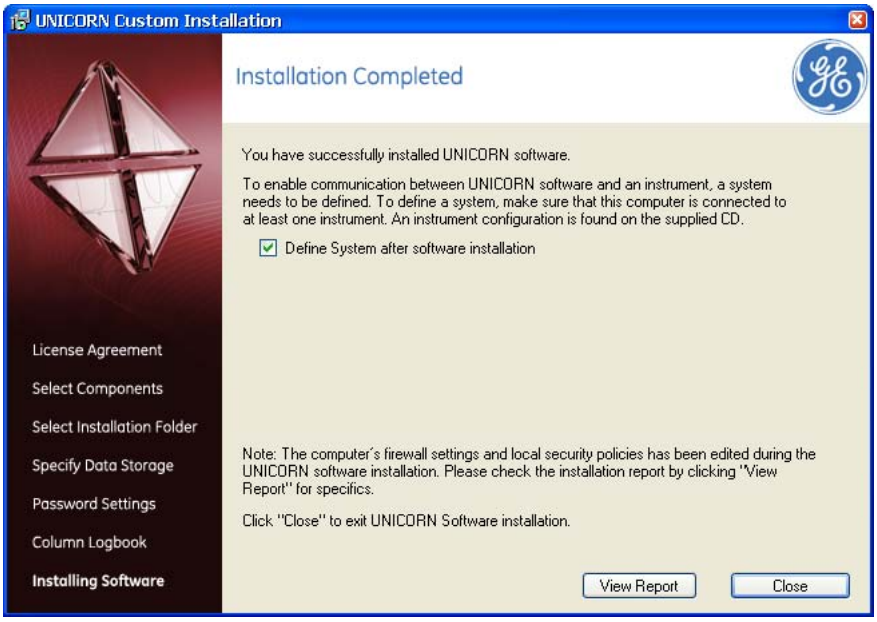

***Note:*** *UNICORN may have identified the database location and entered this by default. Sometimes the name of the database server computer cannot be provided by DNS/WINS. If that is the case, enter the IP adress of the database host computer.*

2 Click the ***Test connection*** button to verify that the communication between the client station and the database is established.

| Step | Action |
|---|---|
| 3 | Click the ***Install*** button to initiate the installation with the settings selected so far.<br>*Result:* The UNICORN software installation starts. |

## Step 7 - Installation completed

The final wizard dialog shown below opens when the installation is complete and the UNICORN Software Client and Instrument Server software is fully installed on the client computer.


UNICORN Custom Installation
Installation Completed
You have successfully installed UNICORN software.
To enable communication between UNICORN software and an instrument, a system needs to be defined. To define a system, make sure that this computer is connected to at least one instrument. An instrument configuration is found on the supplied CD.
Define System after software installation
License Agreement
Select Components
Select Installation Folder
Specify Data Storage
Password Settings
Column Logbook
Installing Software
Note: The computer´s firewall settings and local security policies has been edited during the UNICORN software installation. Please check the installation report by clicking "View Report" for specifics.
Click "Close" to exit UNICORN Software installation.
View Report
Close

At this point you may

- select to define a system (not applicable for a client only installation)

  and/or

- view an installation report.

  ***Note:*** *The report can only be displayed at this point. If you proceed with system definition, you will not be able to generate the report later.*

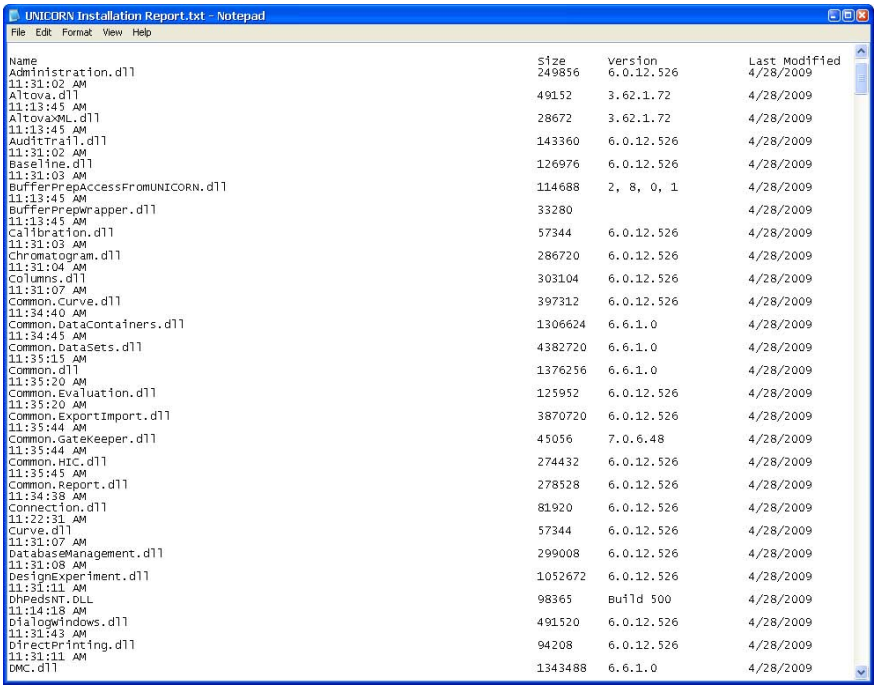
If you have selected to proceed with a system definition, the ***Define System*** dialog will automatically open when you click the ***Close*** button, which completes the installation wizard.

***Note:*** *If several database instances are used in a network installation, it is recommended that each system is defined in only one of the database instances.*

## Installation summary report

When the installation is completed you may open an installation report in text format. This report contains a list of all installed files, including size, version and date of creation. This report may be used to verify that the installation is complete and that the correct files are included.

***Note:*** *During the UNICORN installation some of the default Windows firewall settings and local security policies are modified to enable communication between the client computer, the ÄKTA avant instrument and the database server. The modified settings are listed at the end of the report*.


UNICORN Installation Report.txt - Notepad

File Edit Format View Help

| Name | Size | Version | Last Modified |
|---|---|---|---|
| Administration.dll | 249856 | 6.0.12.526 | 4/28/2009 |
| 11:31:02 AM | | | |
| Altova.dll | 49152 | 3.62.1.72 | 4/28/2009 |
| 11:13:45 AM | | | |
| AltovaXML.dll | 28672 | 3.62.1.72 | 4/28/2009 |
| 11:13:45 AM | | | |
| AuditTrail.dll | 143360 | 6.0.12.526 | 4/28/2009 |
| 11:31:02 AM | | | |
| Baseline.dll | 126976 | 6.0.12.526 | 4/28/2009 |
| 11:31:03 AM | | | |
| BufferPrepAccessFromUNICORN.dll | 114688 | 2, 8, 0, 1 | 4/28/2009 |
| 11:13:45 AM | | | |
| BufferPrepWrapper.dll | 33280 | | 4/28/2009 |
| 11:13:45 AM | | | |
| Calibration.dll | 57344 | 6.0.12.526 | 4/28/2009 |
| 11:31:03 AM | | | |
| Chromatogram.dll | 286720 | 6.0.12.526 | 4/28/2009 |
| 11:31:04 AM | | | |
| Columns.dll | 303104 | 6.0.12.526 | 4/28/2009 |
| 11:31:07 AM | | | |
| Common.Curve.dll | 397312 | 6.0.12.526 | 4/28/2009 |
| 11:34:40 AM | | | |
| Common.DataContainers.dll | 1306624 | 6.6.1.0 | 4/28/2009 |
| 11:34:45 AM | | | |
| Common.DataSets.dll | 4382720 | 6.6.1.0 | 4/28/2009 |
| 11:35:15 AM | | | |
| Common.dll | 1376256 | 6.6.1.0 | 4/28/2009 |
| 11:35:20 AM | | | |
| Common.Evaluation.dll | 125952 | 6.0.12.526 | 4/28/2009 |
| 11:35:20 AM | | | |
| Common.ExportImport.dll | 3870720 | 6.0.12.526 | 4/28/2009 |
| 11:35:44 AM | | | |
| Common.GateKeeper.dll | 45056 | 7.0.6.48 | 4/28/2009 |
| 11:35:44 AM | | | |
| Common.HIC.dll | 274432 | 6.0.12.526 | 4/28/2009 |
| 11:35:45 AM | | | |
| Common.Report.dll | 278528 | 6.0.12.526 | 4/28/2009 |
| 11:34:38 AM | | | |
| Connection.dll | 81920 | 6.0.12.526 | 4/28/2009 |
| 11:22:31 AM | | | |
| Curve.dll | 57344 | 6.0.12.526 | 4/28/2009 |
| 11:31:07 AM | | | |
| DatabaseManagement.dll | 299008 | 6.0.12.526 | 4/28/2009 |
| 11:31:08 AM | | | |
| DesignExperiment.dll | 1052672 | 6.0.12.526 | 4/28/2009 |
| 11:31:11 AM | | | |
| DhPedsNT.DLL | 98365 | Build 500 | 4/28/2009 |
| 11:14:18 AM | | | |
| DialogWindows.dll | 491520 | 6.0.12.526 | 4/28/2009 |
| 11:31:43 AM | | | |
| DirectPrinting.dll | 94208 | 6.0.12.526 | 4/28/2009 |
| 11:31:11 AM | | | |
| DMC.dll | 1343488 | 6.6.1.0 | 4/28/2009 |

# 2.4.6 Define a system at installation

## Instruction

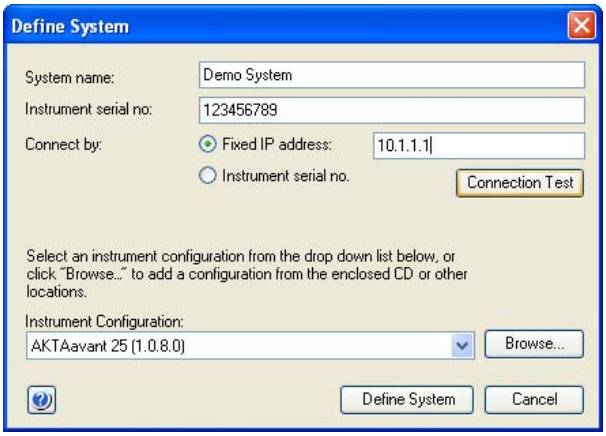
After completing a UNICORN client installation, you can choose to proceed to define a system if the computer is to be used as an instrument server for a locally connected ÄKTA avant instrument. This is described in the table below.

**Tip:** You can also define a system at a later time. This is described in *Section 3.1.3 Define a new system, on page 144*.

***Note:*** *If you also selected to configure an e-license you must first complete that process before you can define a system.*

***Note:*** *To enable connection tests, the ÄKTA avant instrument should be turned on during the system definition.*

| Step | Action |
|---|---|
| 1 | • Select the ***Define system after software installation*** checkbox in the last installation wizard dialog<br>and<br>• Click the ***Close*** button.<br>*Result:* The ***Define System*** dialog opens.<br>(If you also selected to configure an e-license, this process will start first) |




***Note:*** *Before defining the system, ensure that the cable between instrument and the correct network interface card is connected properly.*

| Step | Action |
|---|---|
| 2 | Enter a name in the ***System name*** field.<br>***Note:*** *The system name cannot be changed or edited after the system has been defined.* |
| 3 | Enter the serial number for the instrument in the ***Instrument serial no*** field. You will find this number on the labels either on the inside of the swing-out toolbox or on the back of the instrument.<br>**Tip:** You can also retrieve the serial number of the instrument by entering the IP address and make a connection test as described below. If the connection test is successful, the serial number will be entered automatically. |
| 4 | Select how the instrument shall be identified for connections:<br>• Enter the default ***Fixed IP address*** for the instrument (10.1.1.1).<br>***Note:*** *Fixed IP address should always be used for instrument identification. The default address shown above should be used whenever the instrument is connected using a dedicated network interface card.*<br>*Serial numbers should only be used for instrument identification in very specific situations. Contact GE Healthcare Service for advice if there are reasons to investigate if IP address cannot be used or if the instrument will not be connected using a dedicated network interface card.* |
| 5 | Click the ***Connection Test*** button.<br>*Result:* The connection between the instrument server local station and the instrument is verified.<br>**Tip:** If the connection fails, check that the ***Default Gateway*** address in the ÄKTA avant instrument settings corresponds to the default instrument server IP address. The ***Default Gateway*** address is shown on the ÄKTA avant instrument display, on the ***Settings*** page. |

| Step | Action |
|---|---|
| 6 | Select the appropriate instrument configuration from the ***Instrument Configuration*** droplist menu.<br>The list includes all instrument configurations currently in the UNICORN database. To select a new instrument configuration:<br>• Insert the instrument configuration CD in your CD-ROM drive.<br>• Click the ***Browse*** button and navigate to the configuration file on the CD.<br>• Select the appropriate configuration file. |
| 7 | Click the ***Define System*** button.<br>*Result:* The system definition settings are saved and the new system is made available as an active system. |

# 2.5 OPC settings for UNICORN flow scheme

## Introduction

The flow scheme in UNICORN 6.1 uses an industry standard called OPC, and is based on DCOM (or Distributed COM) as the underlaying communication layer between client and instrument server.

This means that DCOM must be configured properly for the ÄKTA avant flow scheme picture shown on the client computer to be updated with live information from the instrument server.

There are differences in how to configure the computer depending on if the used operating system is Windows XP or Windows 7. There are also differences depending on if the computers are within a Windows workgroup or a domain.

For detailed information about how to enable DCOM, see *Component services, on page 255*.

## Prerequisite installation

*OPC Core Components* are installed as part of the UNICORN 6.1 installation of prerequisite software applications. The following instructions assume that the installation was completed as intended.

## Windows user names and passwords

Unless a domain controller is used, all users must have exactly the same user name and password on all computers running UNICORN. If a domain controller is used, the users will be created at the domain controller and not on each computer. This eliminates the need for synchronized user names and passwords.

## Windows XP

Normally, the flow scheme in UNICORN 6.1 should be able to communicate with the instrument server when running Windows XP in a domain. When Windows XP is used in a workgroup, there is a need for some additional settings before the flow scheme will work.

| Step | Action |
|---|---|
| 1 | If there is a third party firewall[4] enabled on the instrument server:<br>• Allow the ***OPCEnum*** service access<br>(The executable file is located in the ***System32*** directory in the Windows installation directory, typically ***c:\windows\system32***)<br>• Allow ***DCOM*** (port 135) access. |
| 2 | Make sure that the UNICORN clients and the instrument server are using the same subnet mask for the computer IP adresses. |
| 3 | Set the ***Local Security Policy*** setting ***Network access: Sharing and security module for local accounts*** to<br>• ***Classic - Local users authenticate as themselves***.<br>(Open ***Control Panel:Administrative Tools***, click ***Local Security Settings*** and locate this setting under ***Security Settings:Local Policies:Security Options*** in the dialog.) |
| 4 | In the same dialog:<br>• Make sure that the setting ***Network access: Let Everyone permissions apply to anonymous users*** is enabled. |
| 5 | Make sure that the user account which is running the UNICORN client has an equivalent account (using the same name and password) on the instrument server computer. A password is required and cannot be omitted. |

### DCOM configuration

The following settings should be applied to both the remote client and the instrument server computers using the ***Component Services***:

4 Exceptions for the Windows firewall are added by the UNICORN 6.1 installation program.

| Step | Action |
|---|---|
| 1 | Open the ***Component Services*** dialog:<br>1 Choose ***Start:Run***<br>2 type ***dcomcnfg*** in the ***Open*** field<br>and<br>3 click ***OK***. |
| 2 | Open the ***My Computer Properties*** dialog:<br>1 Click the + beside the ***Component Services*** object<br>2 Click the + beside the ***Computers*** object<br>3 Right-click on ***My Computer*** and choose ***Properties*** from the menu. |
| 3 | In the tab ***Default Properties***:<br>1 Verify that ***Enable Distributed COM...*** is checked<br>2 Set ***Default Authentication Level*** to ***Connect***<br>3 Set ***Default Impersonation Level*** to ***Identify*** |
| 4 | In the ***Default Protocols*** tab:<br>• Verify that ***Connection-oriented TCP/IP*** is on top of the list. |
| 5 | In the ***COM Security*** tab:<br>1 Click the ***Edit Default*** button in the ***Access Permissions*** field and allow ***Everyone*** to have ***Local Access*** and ***Remote Access*** permissions.<br>2 Allow ***Anonymous logon*** to have ***Local Access*** and ***Remote Access*** permissions.<br>3 Click the ***Edit Limits*** button in the ***Access Permissions*** field and allow ***Everyone*** to have ***Local Access*** and ***Remote Access*** permissions.<br>4 Allow ***Anonymous logon*** to have ***Local Access*** and ***Remote Access*** permissions.<br>5 Click the ***Edit Default*** button in the ***Launch and Activation Permissions*** field and allow ***Everyone*** to have ***Local Launch***, ***Remote Launch***, ***Local Activation*** and ***Remote Activation*** permissions.<br>6 Click the ***Edit Limits*** button in the ***Launch and Activation Permissions*** field and allow ***Everyone*** to have ***Local Launch***, ***Remote Launch***, ***Local Activation*** and ***Remote Activation*** permissions. |

| Step | Action |
|---|---|
| 6 | Verify the UNICORN Instrument Server DCOM settings:<br>1 Click the + beside ***My Computer***.<br>2 Click the + beside the ***DCOM Config***.<br>3 Locate ***UNICORN Instrument Server.exe*** in the list, right-click and choose ***Properties*** from the menu.<br>4 Choose the ***Security*** tab.<br>5 Verify that ***Launch and Activation Permissions*** and ***Access Permissions*** both are set to ***Use Default***.<br>6 Click the ***Apply*** button (if changes have been made) or the ***OK*** button to close the ***Properties*** dialog. |
| 7 | Close the ***Component Services*** dialog. |
| 8 | Restart the computers after the DCOM settings have been applied. |

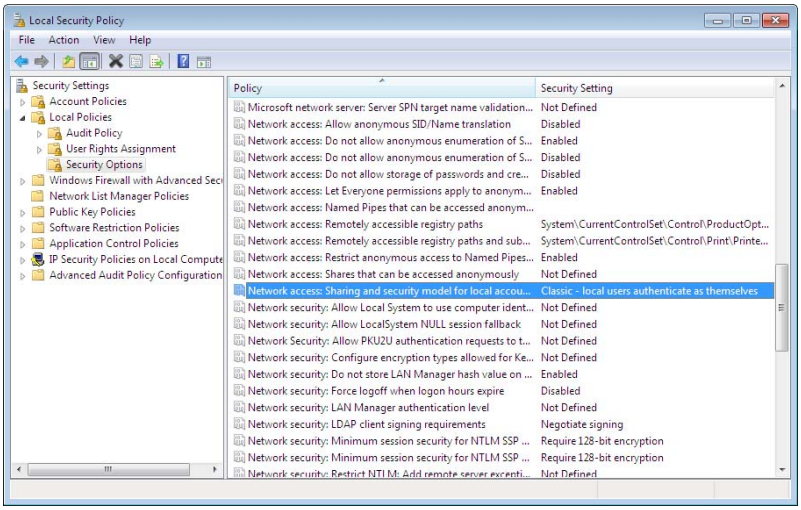
## Windows 7

The User Account Control (UAC) feature in Windows 7, combined with restrictions applied on DCOM when running UNICORN on Windows 7 computers, makes additional changes to the configuration necessary to allow the flow scheme to communicate with the instrument server. These settings can be applied to Windows 7 both in workgroups and domains if needed.

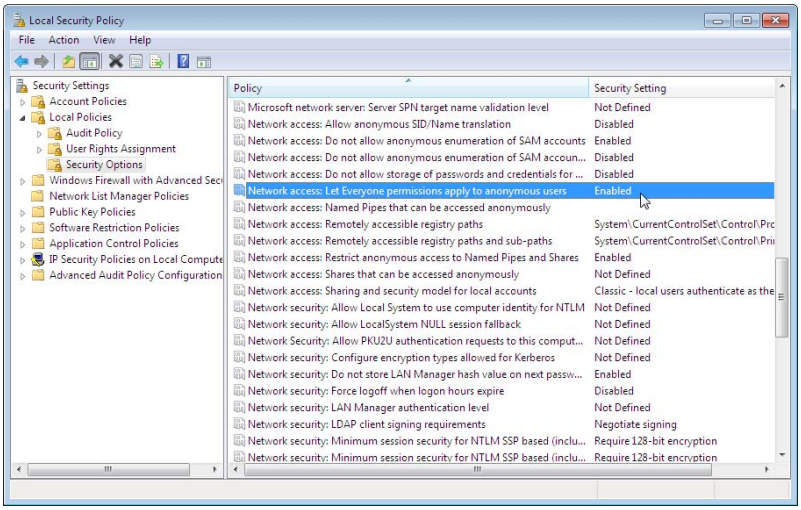
| Step | Action |
|---|---|
| 1 | If there is a third party firewall [5]<br>enabled on the instrument server:<br>• Allow the ***OPCEnum*** service access<br>(The executable file is located in the ***System32*** directory in the Windows installation directory, typically ***c:\windows\system32***)<br>• Allow ***DCOM*** (port 135) access. |
| 2 | Make sure that the UNICORN clients and the instrument server are using the same subnet mask for the computer IP adresses. |

5 Exceptions for the Windows firewall are added by the UNICORN 6.1 installation program.

| Step | Action |
|---|---|
| 3 | Set the ***Local Policies:Security Options*** setting ***Network access: Sharing and security module for local accounts*** to<br>• ***Classic - Local users authenticate as themselves***.<br>- Type "Local Security Policy" in the Windows Start menu search field and<br>- click the ***Local Security Policy*** item that is displayed as the search result.<br>- Expand ***Security Settings:Local Policies:Security Options***<br>- Locate ***Network access: Sharing and security module for local accounts*** in the ***Policy*** list and change the setting if necessary |


Local Security Policy
File Action View Help
Security Settings
Account Policies
Local Policies
Audit Policy
User Rights Assignment
Security Options
Windows Firewall with Advanced Sec
Network List Manager Policies
Public Key Policies
Software Restriction Policies
Application Control Policies
IP Security Policies on Local Compute
Advanced Audit Policy Configuration
Policy
Security Setting
Microsoft network server: Server SPN target name validation... Not Defined
Network access: Allow anonymous SID/Name translation Disabled
Network access: Do not allow anonymous enumeration of S... Enabled
Network access: Do not allow anonymous enumeration of S... Disabled
Network access: Do not allow storage of passwords and cre... Disabled
Network access: Let Everyone permissions apply to anonym... Enabled
Network access: Named Pipes that can be accessed anonym...
Network access: Remotely accessible registry paths System\CurrentControlSet\Control\ProductOpt...
Network access: Remotely accessible registry paths and sub... System\CurrentControlSet\Control\Print\Printe...
Network access: Restrict anonymous access to Named Pipes... Enabled
Network access: Shares that can be accessed anonymously Not Defined
Network access: Sharing and security model for local accou... Classic - local users authenticate as themselves
Network security: Allow Local System to use computer ident... Not Defined
Network security: Allow LocalSystem NULL session fallback Not Defined
Network Security: Allow PKU2U authentication requests to t... Not Defined
Network security: Configure encryption types allowed for Ke... Not Defined
Network security: Do not store LAN Manager hash value on ... Enabled
Network security: Force logoff when logon hours expire Disabled
Network security: LAN Manager authentication level Not Defined
Network security: LDAP client signing requirements Negotiate signing
Network security: Minimum session security for NTLM SSP ... Require 128-bit encryption
Network security: Minimum session security for NTLM SSP ... Require 128-bit encryption

| Step | Action |
|---|---|
| 4 | In the same dialog:<br>• Make sure that the setting ***Network access: Let Everyone permissions apply to anonymous users*** is enabled. |

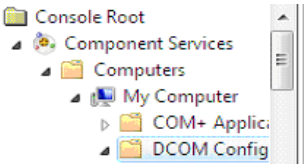

Local Security Policy
File Action View Help
Security Settings
Account Policies
Local Policies
Audit Policy
User Rights Assignment
Security Options
Windows Firewall with Advanced Sec
Network List Manager Policies
Public Key Policies
Software Restriction Policies
Application Control Policies
IP Security Policies on Local Compute
Advanced Audit Policy Configuration
Policy
Security Setting
Microsoft network server: Server SPN target name validation level
Not Defined
Network access: Allow anonymous SID/Name translation
Disabled
Network access: Do not allow anonymous enumeration of SAM accounts
Enabled
Network access: Do not allow anonymous enumeration of SAM accoun...
Disabled
Network access: Do not allow storage of passwords and credentials for ...
Disabled
Network access: Let Everyone permissions apply to anonymous users
Enabled
Network access: Named Pipes that can be accessed anonymously
Network access: Remotely accessible registry paths
System\CurrentControlSet\Control\Prc
Network access: Remotely accessible registry paths and sub-paths
System\CurrentControlSet\Control\Pri
Network access: Restrict anonymous access to Named Pipes and Shares
Enabled
Network access: Shares that can be accessed anonymously
Not Defined
Network access: Sharing and security model for local accounts
Classic - local users authenticate as the
Network security: Allow Local System to use computer identity for NTLM
Not Defined
Network security: Allow LocalSystem NULL session fallback
Not Defined
Network Security: Allow PKU2U authentication requests to this comput...
Not Defined
Network security: Configure encryption types allowed for Kerberos
Not Defined
Network security: Do not store LAN Manager hash value on next passw...
Enabled
Network security: Force logoff when logon hours expire
Disabled
Network security: LAN Manager authentication level
Not Defined
Network security: LDAP client signing requirements
Negotiate signing
Network security: Minimum session security for NTLM SSP based (inclu...
Require 128-bit encryption
Network security: Minimum session security for NTLM SSP based (inclu...
Require 128-bit encryption

| | |
|---|---|
| 5 | Make sure that the user account which is running the UNICORN client has an equivalent account (using the same name and password) on the instrument server computer. A password is required and cannot be omitted.<br>***Note:*** *This is necessary only when the UNICORN is used in a workgroup, not when it is used in a domain.* |

## Instrument server settings

The following settings should be applied to the instrument server computers using the ***Component Services***:

| Step | Action |
|---|---|
| 1 | Open the ***Component Services*** dialog:<br>• Type "Component Services" in the Windows Start menu search field and<br>• click the ***Component Services*** item that is displayed as the search result. |

| Step | Action |
|---|---|
| 2 | Open the ***UNICORN Instrument Server.exe Properties*** dialog:<br>1 Click the ▷ beside the ***Component Services*** object<br>2 Click the ▷ beside the ***Computers*** object<br>3 Click the ▷ beside ***My Computer***.<br>4 Click the ▷ beside the ***DCOM Config***.<br>  <br>5 Locate ***UNICORN Instrument Server.exe*** in the list, right-click and choose ***Properties*** from the menu.<br>***Note:*** *One or several DCOM configuration warnings may be displayed. Click **Yes** to acknowledge each one.* |
| 3 | Add the built-in group ***Users*** (or ***Authenticated Users*** if the computer is used in a domain) and set ***Launch and Activation Permissions*** for the group:<br>1 Choose the ***Security*** tab.<br>2 Choose the ***Customize*** option in the***Launch and Activation Permissions*** field.<br>3 Click the ***Edit*** button.<br>4 Click the ***Add*** button in the ***Launch and Activation Permissions*** dialog.<br>5 Enter the group ***Users*** (or ***Authenticated Users*** if the computer is used in a domain) in the ***Select Users, Computers, or Groups*** dialog and click ***OK***. |

| Step | Action |
|---|---|
| 4 | Set the permissions for the new group ***Users*** (or ***Authenticated Users***) in the ***Launch and Activation Permissions*** dialog. Select the group and click the checkboxes to ***Allow***<br>• ***Local Launch***<br>• ***Remote Launch***<br>• ***Local Activation***<br>and<br>• ***Remote Activation***<br>Click ***OK*** to apply and close the ***Launch and Activation Permissions*** dialog. |
| 5 | Add the built-in group ***Users*** (or ***Authenticated Users*** if the computer is used in a domain) and set ***Access Permissions*** for the group:<br>1 Choose the ***Customize*** option in the ***Access Permissions*** field.<br>2 Click the ***Edit*** button.<br>3 Click the ***Add*** button in the ***Launch and Activation Permissions*** dialog.<br>4 Enter the group ***Users*** (or ***Authenticated Users*** if the computer is used in a domain) in the ***Select Users, Computers, or Groups*** dialog and click ***OK***. |
| 6 | Set the permissions for the new group ***Users*** (or ***Authenticated Users***) in the ***Access Permission*** dialog. Select the group and click the checkboxes to ***Allow***<br>• ***Local Access***<br>• ***Remote Access***<br>Click ***OK*** to apply and close the ***Access Permission*** dialog.<br>Click ***OK*** to close the ***UNICORN Instrument Server Properties*** dialog. |

| Step | Action |
|---|---|
| 7 | Adjust the limits globally on the instrument server computer:<br>1 Right-click on ***My Computer*** in the tree view in the left panel of the ***Component Services*** dialog, and choose ***Properties*** from the menu.<br>2 Select the ***COM Security*** tab.<br>3 Click the ***Edit Limits*** button in the ***Access Permissions*** field and allow ***Users*** (or ***Authenticated Users***) to have ***Local Access*** and ***Remote Access*** permissions.<br>***Note:*** *The group* ***Users*** *(or* ***Authenticated Users*** *if the computer is used in a domain) may have to be added if it is not already present.*<br>Click ***OK***.<br>4 Click the ***Edit Limits*** button in the ***Launch and Activation Permissions*** field and allow ***Users*** (or ***Authenticated Users***) to have ***Local Launch***, ***Remote Launch***, ***Local Activation*** and ***Remote Activation*** permissions.<br>Click ***OK***. |
| 8 | Click ***OK*** to close the ***My Computer Properties*** dialog. |
| 9 | Close the ***Component Services*** dialog and restart UNICORN.<br>(Normally you will not need to restart the computer) |

## UNICORN client computer settings

The following settings should be applied to the remote client computers using the ***Component Services***:

| Step | Action |
|---|---|
| 1 | Open the ***Component Services*** dialog:<br>• Type "Component Services" in the Windows Start menu search field and<br>• click the ***Component Services*** item that is displayed as the search result. |
| 2 | Open the ***My Computer Properties*** dialog:<br>1 Click the ▷ beside the ***Component Services*** object<br>2 Click the ▷ beside the ***Computers*** object<br>3 Right-click on ***My Computer*** and choose ***Properties*** from the menu. |

| Step | Action |
|---|---|
| 3 | In the tab ***Default Properties***:<br>1 Verify that ***Enable Distributed COM...*** is checked<br>2 Set ***Default Authentication Level*** to ***Connect***<br>3 Set ***Default Impersonation Level*** to ***Identify*** |
| 4 | In the ***Default Protocols*** tab:<br>• Verify that ***Connection-oriented TCP/IP*** is on top of the list. |
| 5 | In the ***COM Security*** tab:<br>1 Click the ***Edit Limits*** button in the ***Access Permissions*** field and allow ***Everyone*** to have ***Local Access*** and ***Remote Access*** permissions.<br>(If necessary, add ***Everyone*** by clicking the ***Add...*** button)<br>2 Allow ***Anonymous logon*** to have ***Local Access*** and ***Remote Access*** permissions.<br>(If necessary, add ***Anonymous logon*** by clicking the ***Add...*** button)<br>Click ***OK***.<br>3 Click the ***Edit Default*** button in the ***Access Permissions*** field and allow ***Everyone*** to have ***Local Access*** and ***Remote Access*** permissions.<br>4 Allow ***Anonymous logon*** to have ***Local Access*** and ***Remote Access*** permissions.<br>Click ***OK***. |
| 6 | Close the ***Component Services*** dialog.<br>Select ***Yes*** to accept changing DCOM machine wide settings. |
| 7 | Restart UNICORN on the client computers.<br>(Normally you will not need to restart the computers) |

# 2.6 Firewall exceptions

## Introduction

If third party firewalls are used within the UNICORN network, the exceptions described in this chapter must be set in order for UNICORN to operate properly. However, provided that the Windows firewall is used, the UNICORN installation will normally configure the firewall settings appropriately.

***Note:*** *Firewall settings which concern the UNICORN flow scheme function are listed in Section 2.5 OPC settings for UNICORN flow scheme, on page 101 as well as here.*

---

## General firewall exceptions

Exceptions must be set for the following programs:

- ***OPCEnum.exe***

  (usually found in ***C:\WINDOWS\system32***)

- ***UNICORNClient.exe***

  (usually found in ***C:\Program Files\GE Healthcare\UNICORN\bin***)

Also, exceptions must be made for

- the TCP and UDP port ranges 40500 to 40510

  and

- TCP port 135 (for DCOM communication as described in *Section 2.5 OPC settings for UNICORN flow scheme, on page 101*)
- UDP port 1434

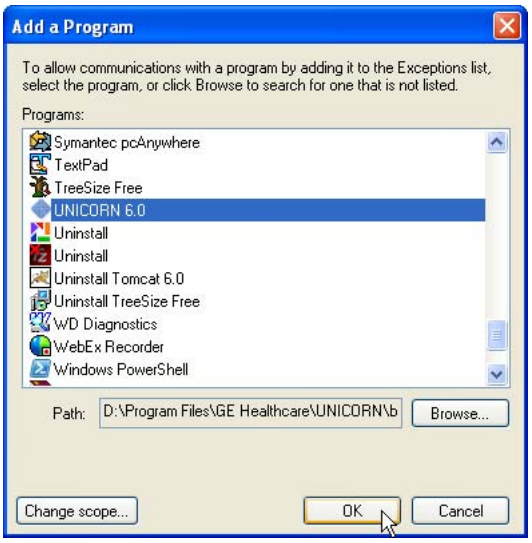
---

## Define firewall exceptions

Follow the instructions below to define firewall excpetions in the ***Windows Firewall***:

| Step | Action |
|---|---|
| 1 | Open the ***Windows Security Center***.<br>(Choose menu item ***Start:All Programs:Accessories:System Tools:Security Center*** in Windows XP)<br> |
| 2 | • Click ***Windows Firewall*** to open the settings dialog and<br>• choose the ***Exceptions*** tab. |

| Step | Action |
|---|---|
| 3 | Click the ***Add Program...*** button to open the ***Add a Program*** dialog: |




4

- Click the ***Browse*** button to locate and select the program files

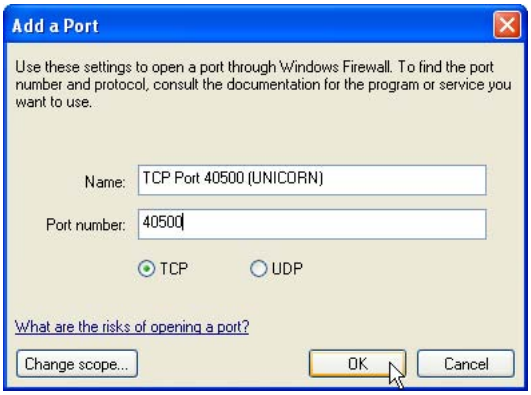
  or

- select the program in the list

  and

- click the ***OK*** button to add the exception.

Perform this step for ***UNICORNClient.exe*** and ***OPCEnum.exe***.

| Step | Action |
|---|---|
| 5 | Click the ***Add Port...*** button in the ***Windows Firewall*** dialog, to open the ***Add a Port*** dialog:<br>  |
| 6 | • Select to add a ***TCP*** port<br>• Enter a name in the ***Name*** field<br>• Enter the ***Port number***<br>and<br>• Click the ***OK*** button to add the port exception.<br>Repeat step 5 and 6 to add exceptions for all ***TCP*** ports between ***40500*** and ***40510***. |
| 7 | • Click the ***Add Port...*** button in the ***Windows Firewall*** dialog to open the ***Add a Port*** dialog again.<br>• Select to add a ***UDP*** port<br>• Enter a name in the ***Name*** field<br>• Enter the ***Port number***<br>and<br>• Click the ***OK*** button to add the port exception.<br>Repeat this step to add exceptions for all ***UDP*** ports between ***40500*** and ***40510***. |
| 8 | Repeat step 5 and 6 to add an exception for ***TCP port 135***. Name this port ***DCOM***. |

| Step | Action |
|---|---|
| 9 | Click the ***OK*** button to close the ***Windows Firewall*** dialog and apply the changes. |
| 10 | Close the ***Windows Security Center***. |

## Instrument Server firewall exceptions

In addition to the general exceptions listed above, computers running as UNICORN instrument servers should have firewall exceptions for the following programs:

- ***UNICORN Instrument Server.exe***

  (usually found in ***C:\Program Files\GE Healthcare\UNICORN\bin***)

- ***SystemInstallation.exe***

  (usually found in ***C:\Program Files\GE Healthcare\UNICORN\bin***)

  ***Note:*** *The Windows firewall exception created by the UNICORN 6.1 installation for the program* ***SystemInstallation.exe*** *is called* ***UNICORN System Creator***.

Follow the instructions above to enter these exceptions.

## Database Server firewall exceptions

In addition to the general exceptions listed above, computers running as UNICORN database servers should have firewall exceptions for the following programs:

- ***Sqlservr.exe*** (usually found in ***C:\Program Files\Microsoft SQL Server\MSSQL10.UNICORN\MSSQL\Binn***)
- ***gehealth.exe*** (usually found in ***C:\Program Files\GE Healthcare\UNICORN\LicenseServer***)

  ***Note:*** *The Windows firewall exception created by the UNICORN 6.1 installation for the program* ***gehealth.exe*** *is called* ***GE Healthcare License Server Manager***.

- ***lmgrd.exe*** (usually found in ***C:\Program Files\GE Healthcare\UNICORN\LicenseServer***)

  ***Note:*** *The Windows firewall exception created by the UNICORN 6.1 installation for the program* ***lmgrd.exe*** *is called* ***GE Healthcare Software Licensing Server***.

Follow the instructions above to enter these exceptions.

Also, UDP port 1434 should be opened. Name this exception ***SQL Server Browser***.

***Note:*** *This port setting is a default for secure networks. If a higher level of security is needed, other settings must be selected. Contact GE Healthcare for advice.*

# 2.7 Upgrade UNICORN 6.0 to UNICORN 6.1

## Introduction

The UNICORN 6.1 installation program will automatically identify if a UNICORN 6.0 installation is present on the computer when you attempt to install UNICORN 6.1. You will have the options either to remove the old installation, or to upgrade to UNICORN 6.1 immediately.

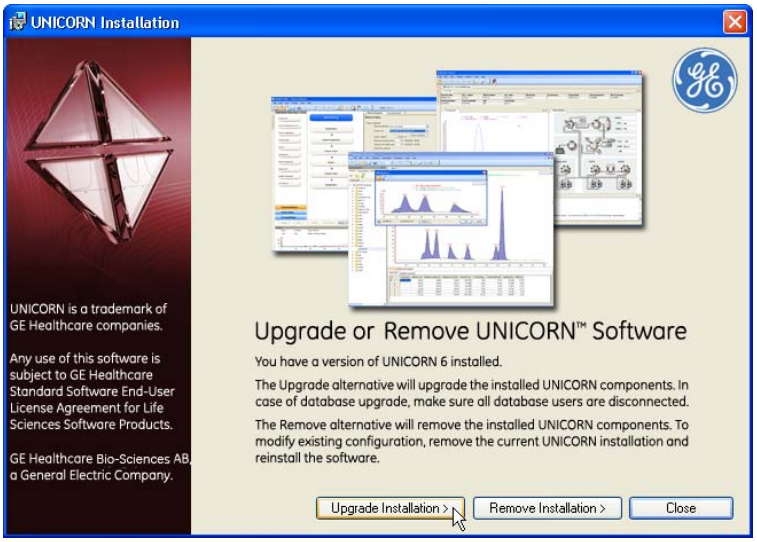
Normally, it will be most convenient to upgrade and not to remove the older version first. However, if you wish to modify the software configuration you may need to remove the older version first and make a clean, new installation of UNICORN 6.1 with new settings. When upgrading, the settings used for the older installation will be applied automatically.

In a network deployment it is essential that all installations sharing data are upgraded, including all database servers, instrument servers and network clients.

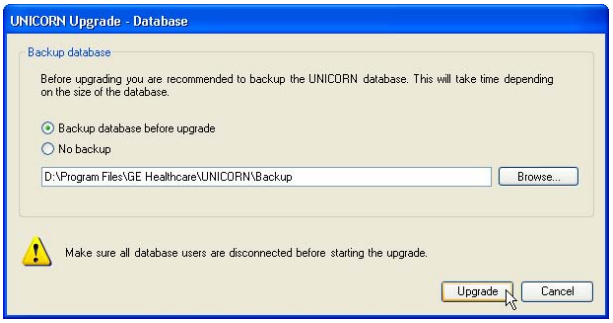
## Upgrading UNICORN

Follow the instructions in the table below to perform the upgrade:

| Step | Action |
|---|---|
| 1 | Insert the installation DVD in your DVD drive.<br>*Result:* The UNICORN 6.1 Installation wizard opens with a welcome dialog.<br>**Tip:** If the DVD drive is not set up to allow automatic start, browse the DVD contents and doubleclick the file UNICORNSetup.exe to initiate the installation. |
| 2 | Click the ***Upgrade Installation*** button. |


UNICORN Installation
UNICORN is a trademark of GE Healthcare companies.
Any use of this software is subject to GE Healthcare Standard Software End-User License Agreement for Life Sciences Software Products.
GE Healthcare Bio-Sciences AB, a General Electric Company.
Upgrade or Remove UNICORN™ Software
You have a version of UNICORN 6 installed.
The Upgrade alternative will upgrade the installed UNICORN components. In case of database upgrade, make sure all database users are disconnected.
The Remove alternative will remove the installed UNICORN components. To modify existing configuration, remove the current UNICORN installation and reinstall the software.
Upgrade Installation >
Remove Installation >
Close

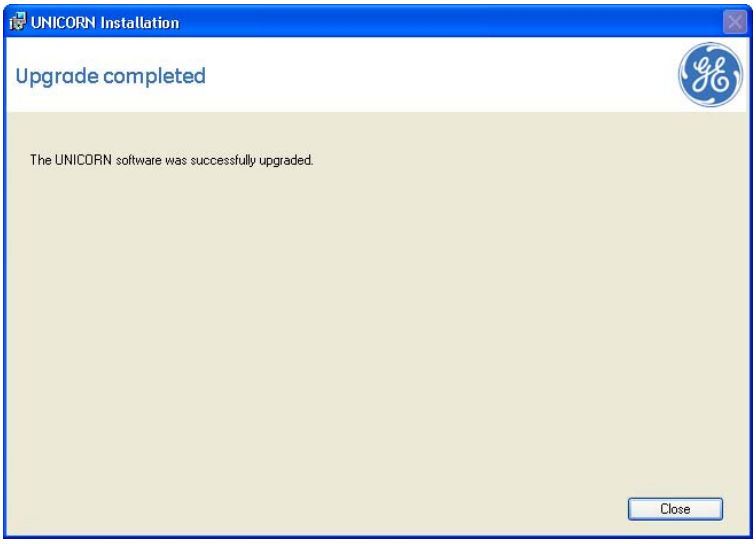
| Step | Action |
|---|---|
| 3 | If the upgraded installation includes a database (i.e. is not only a network client installation), you will be asked to backup the database.<br>• Select ***Backup database before upgrade*** (default option)<br>• Click the ***Browse*** button to locate and select a backup folder (By default, the backup folder selected at the initial installation will be suggested)<br>• Click the ***Upgrade*** button to proceed. |


UNICORN Upgrade - Database
Backup database
Before upgrading you are recommended to backup the UNICORN database. This will take time depending on the size of the database.
Backup database before upgrade
No backup
D:\Program Files\GE Healthcare\UNICORN\Backup
Browse...
Make sure all database users are disconnected before starting the upgrade.
Upgrade
Cancel

***Note:*** *Ensure that the database is not in use during the backup, otherwise the backup may fail.*

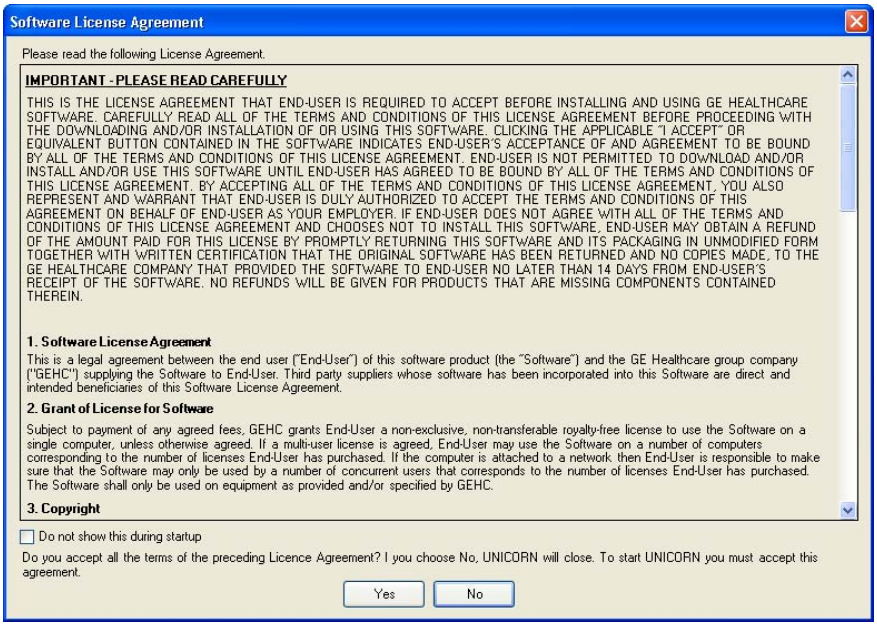
| | |
|---|---|
| 4 | The upgrading process is initiated and proceeds automatically. |

| Step | Action |
|---|---|
| 5 | After the upgrade is completed, a final wizard page opens. Click the ***Close*** button to complete the upgrade and close the wizard. |



## License Agreement

The first time you start UNICORN 6.1 after the upgrade, you will be asked to accept the software license agreement. The agreement must be accepted at least at the first log on in order for UNICORN 6.1 to start. However, you may select the ***Do not show this during startup*** checkbox so that the license agreement is not displayed automatically each time UNICORN 6.1 is started.


Software License Agreement
Please read the following License Agreement.
IMPORTANT - PLEASE READ CAREFULLY
THIS IS THE LICENSE AGREEMENT THAT END-USER IS REQUIRED TO ACCEPT BEFORE INSTALLING AND USING GE HEALTHCARE SOFTWARE. CAREFULLY READ ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT BEFORE PROCEEDING WITH THE DOWNLOADING AND/OR INSTALLATION OF OR USING THIS SOFTWARE. CLICKING THE APPLICABLE "I ACCEPT" OR EQUIVALENT BUTTON CONTAINED IN THE SOFTWARE INDICATES END-USER'S ACCEPTANCE OF AND AGREEMENT TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT. END-USER IS NOT PERMITTED TO DOWNLOAD AND/OR INSTALL AND/OR USE THIS SOFTWARE UNTIL END-USER HAS AGREED TO BE BOUND BY ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT. BY ACCEPTING ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT, YOU ALSO REPRESENT AND WARRANT THAT END-USER IS DULY AUTHORIZED TO ACCEPT THE TERMS AND CONDITIONS OF THIS AGREEMENT ON BEHALF OF END-USER AS YOUR EMPLOYER. IF END-USER DOES NOT AGREE WITH ALL OF THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT AND CHOOSES NOT TO INSTALL THIS SOFTWARE, END-USER MAY OBTAIN A REFUND OF THE AMOUNT PAID FOR THIS LICENSE BY PROMPTLY RETURNING THIS SOFTWARE AND ITS PACKAGING IN UNMODIFIED FORM TOGETHER WITH WRITTEN CERTIFICATION THAT THE ORIGINAL SOFTWARE HAS BEEN RETURNED AND NO COPIES MADE, TO THE GE HEALTHCARE COMPANY THAT PROVIDED THE SOFTWARE TO END-USER NO LATER THAN 14 DAYS FROM END-USER'S RECEIPT OF THE SOFTWARE. NO REFUNDS WILL BE GIVEN FOR PRODUCTS THAT ARE MISSING COMPONENTS CONTAINED THEREIN.
1. Software License Agreement
This is a legal agreement between the end user ("End-User") of this software product (the "Software") and the GE Healthcare group company ("GEHC") supplying the Software to End-User. Third party suppliers whose software has been incorporated into this Software are direct and intended beneficiaries of this Software License Agreement.
2. Grant of License for Software
Subject to payment of any agreed fees, GEHC grants End-User a non-exclusive, non-transferable royalty-free license to use the Software on a single computer, unless otherwise agreed. If a multi-user license is agreed, End-User may use the Software on a number of computers corresponding to the number of licenses End-User has purchased. If the computer is attached to a network then End-User is responsible to make sure that the Software may only be used by a number of concurrent users that corresponds to the number of licenses End-User has purchased. The Software shall only be used on equipment as provided and/or specified by GEHC.
3. Copyright
Do not show this during startup
Do you accept all the terms of the preceding Licence Agreement? I you choose No, UNICORN will close. To start UNICORN you must accept this agreement.
Yes
No

## Database upgrade for UNICORN 6.1

The UNICORN 6.1 upgrade alternative will include all necessary conversions of the UNICORN 6.0 database to the newer format. Once the upgrade has been performed on the server computer where the database resides, no other conversion should be necessary.

Methods and results that have been created and exported using UNICORN 6.0 can be imported directly into the UNICORN 6.1 database without conversion. However, restoring a backup of a UNICORN 6.0 database after the UNICORN 6.1 upgrade of the database server will make it necessary to run the upgrade wizard again to perform the database upgrade.

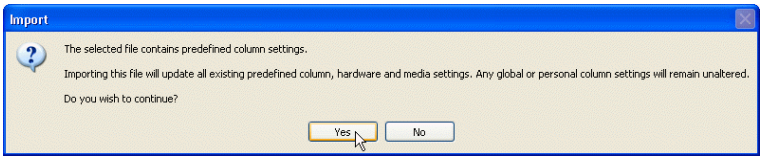
## Update instrument configurations

After the upgrade has been completed, you should also import new, compatible instrument configurations for your systems. Contact your GE Healthcare representative for the most recent available instrument configuration CD.

## Import new column list

After upgrading to UNICORN 6.1, a new list of predefined column types must also be imported. This list can be found in the ***Misc*** folder of the UNICORN 6.1 installation DVD.

The table below describes how to import a new column list into the database:

| Step | Action |
|---|---|
| 1 | In the ***Column Type Parameters*** tab in the ***Column Handling*** dialog, click Import... .<br>*Result:* The ***Import*** dialog opens. |
| 2 | Locate the zip file with the column list to be imported and click ***Open***.<br>*Result:* The ***Import*** confirmation dialog opens, explaining what will will happen when the zip file is imported.<br>  |
| 3 | Click ***Yes***.<br>*Result:* The new list of predefined column types is imported into the database. |

## Service pack for SQL Server 2008

After the UNICORN 6.1 upgrade of the database you must install Service Pack 1 for Microsoft SQL Server 2008. The service pack is available for download from the Microsoft Download Center, at the following address:

- ***http://www.microsoft.com/downloads/details.aspx?FamilyID=66ab3dbb-bf3e-4f46-9559-ccc6a4f9dc19&displaylang=en***

Follow the instructions on the webpage to perform the installation.

# 2.8 Printers

## Printer for PDF

When printing reports, lists and other items in UNICORN you will normally use the printers that are defined in Windows for the client computer. The default Windows printer will always be shown as the first choice in the ***Print*** dialogs.

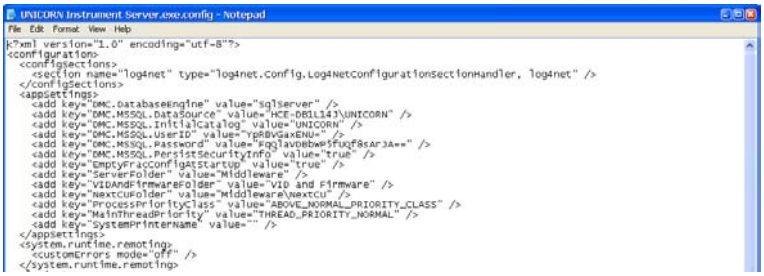
Reports created in the ***Evaluation*** module can be saved in PDF format by choosing the ***Save As PDF*** menu option from the ***Preview*** window. However, to save other reports as PDF you must have a PDF printer installed on the computer where the report is printed. For this you need a full installation of Adobe™ Acrobat™ or a similar software.

---

## Set up a system printer

For system generated prints (e.g. printed reports generated by evaluation procedures), you must define a default printer specifically for the instrument server computer. The table below describes how to do this.

| Step | Action |
|---|---|
| 1 | Find the name of a suitable network printer that is accessible for the instrument server client station.<br>• The name is available in the ***General*** tab of the printer properties. You can open the properties by right-clicking the printer in the ***Printers and Faxes*** dialog. This dialog opens from the ***Control Panel*** in Windows.<br>***Note:*** *The printer must be a proper network printer with access for the "SYSTEM" user. All printers that are shared over the network will not necessarily work. Verify the status of the selected printer with the network administrator before you proceed with this instruction.* |
| 2 | Copy the printer name to the clipboard. |

| Step | Action |
|---|---|
| 3 | The printer setting is edited in<br>• `\Program Files\GE Healthcare\UNICORN\bin\UNICORN Instrument Server.exe.config`<br>***Note:*** *The exact search path depends on the location of the UNICORN installation folder.*<br>Locate the configuration file and open it in a text editor (e.g., Notepad).<br>  |
| 4 | Locate the entry `<add key="SystemPrinterName" value="" />` |
| 5 | Place the mouse pointer between the last quotes in the line and paste the printer name there:<br>• `<add key="SystemPrinterName" value="Printer Name" />` |
| 6 | Save the configuration file and close Notepad. |
| 7 | Restart the computer. |

***Note:*** *Do not make any other changes in this configuration file as this may cause severe performance problems for UNICORN. Errors in this file may make it impossible to run UNICORN at all.*

# 2.9 Remove a UNICORN 6.1 installation

## Introduction

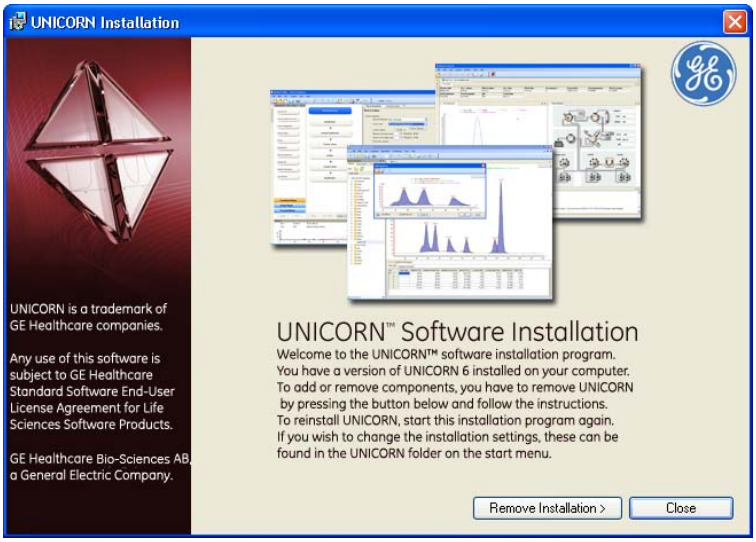
This section describes how to remove a UNICORN installation. UNICORN can be removed either using the installation DVD or the Windows Add or Remove Programs dialog.

***Note:*** *When removing a UNICORN installation with a local database, you are recommended to always take a backup of the database and save the backup safely, somewhere else than in the regular backup folder.*

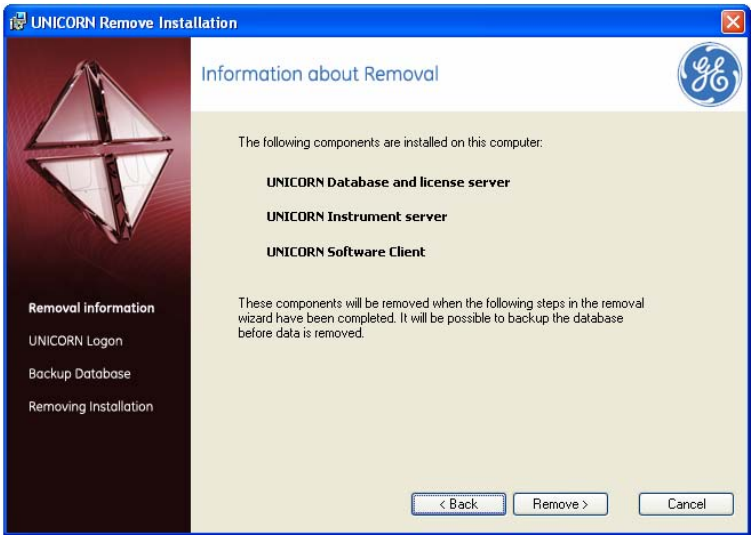
## Remove the installation

The table below describes how to remove the UNICORN 6.1 software installation using the installation wizard:

| Step | Action |
|---|---|
| 1 | Insert the UNICORN 6.1 installation DVD in the DVD drive.<br>*Result:* The UNICORN Installation wizard opens. The only available option is to remove the installation. |


UNICORN Installation
UNICORN is a trademark of GE Healthcare companies.
Any use of this software is subject to GE Healthcare Standard Software End-User License Agreement for Life Sciences Software Products.
GE Healthcare Bio-Sciences AB, a General Electric Company.
UNICORN™ Software Installation
Welcome to the UNICORN™ software installation program.
You have a version of UNICORN 6 installed on your computer.
To add or remove components, you have to remove UNICORN by pressing the button below and follow the instructions.
To reinstall UNICORN, start this installation program again.
If you wish to change the installation settings, these can be found in the UNICORN folder on the start menu.
Remove Installation >
Close

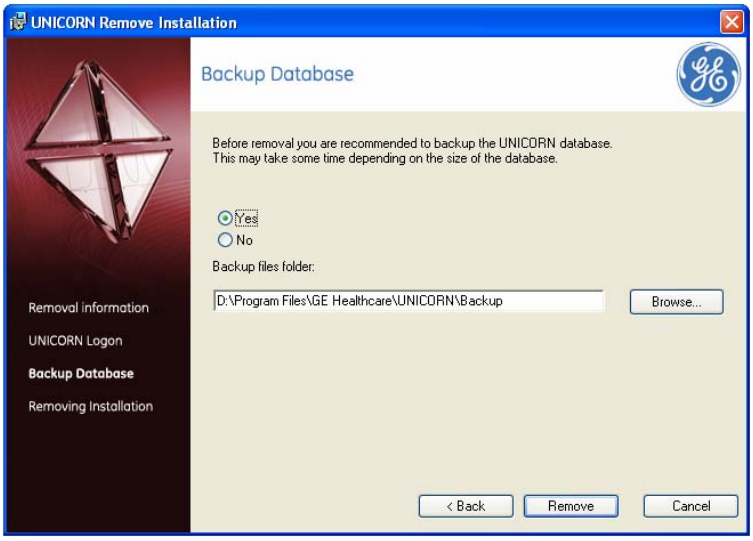
| Step | Action |
|---|---|
| 2 | Click the ***Remove Installation*** button.<br>*Result:* The next wizard dialog shows the installed UNICORN software components that will be removed if you proceed. |


UNICORN Remove Installation
Information about Removal
The following components are installed on this computer:
UNICORN Database and license server
UNICORN Instrument server
UNICORN Software Client
These components will be removed when the following steps in the removal wizard have been completed. It will be possible to backup the database before data is removed.
Removal information
UNICORN Logon
Backup Database
Removing Installation
< Back
Remove >
Cancel

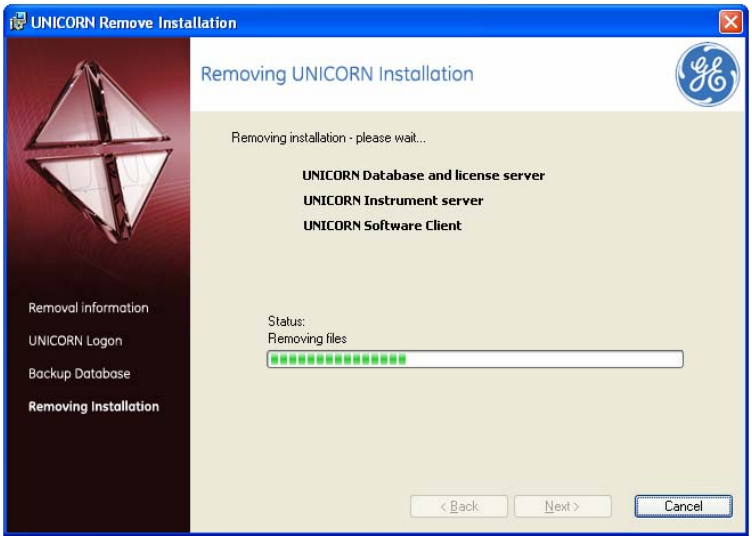
| Step | Action |
|---|---|
| 3 | Click the ***Remove*** button.<br>*Result:*<br>• If database and license server software is installed, the ***Select UNICORN User and Logon Password*** dialog opens. Proceed with step 4 below<br>• If the database and license server software is not installed, the software components are removed at this point. A progress dialog will open, showing the components that are removed. Proceed with step 6 below. |

UNICORN Remove Installation
Select UNICORN User and Logon Password
Select a UNICORN user with administrator access rights and enter logon password.
This is required to authenticate the user for database backup and removal.
UNICORN User name :
Roger
UNICORN Logon password:
Removal information
UNICORN Logon
Backup Database
Removing Installation
< Back
Next >
Cancel

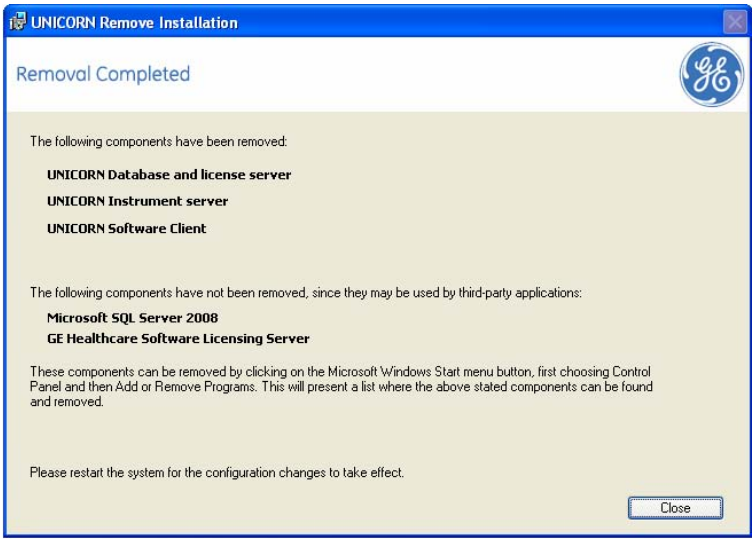
| Step | Action |
|---|---|
| 4 | • Select your user name from the UNICORN droplist menu<br>***Note:*** *You must have administrator access rights to remove a database.*<br>• Enter your logon password<br>and<br>• Click the ***Next*** button<br>*Result:* The ***Backup Database*** dialog opens. |



| Step | Action |
|---|---|
| 5 | • Select ***Yes*** to perform a backup.<br>• Either accept the default backup destination or click the ***Browse*** button to choose another destination.<br>• Click the ***Remove*** button.<br>*Result:* A progress dialog opens. The installed UNICORN components shown in the dialog are removed. |



| Step | Action |
|---|---|
| 6 | The final wizard dialog opens when the removal is completed. The dialog shows the components that have been removed and, when applicable, components that remain installed: |


UNICORN Remove Installation
Removal Completed
The following components have been removed:
UNICORN Database and license server
UNICORN Instrument server
UNICORN Software Client
The following components have not been removed, since they may be used by third-party applications:
Microsoft SQL Server 2008
GE Healthcare Software Licensing Server
These components can be removed by clicking on the Microsoft Windows Start menu button, first choosing Control Panel and then Add or Remove Programs. This will present a list where the above stated components can be found and removed.
Please restart the system for the configuration changes to take effect.
Close

To finalize the removal

- Click the ***Close*** button

  and

- restart the computer.

***Note:*** *If the removal procedure is unable to access the database, you will recieve an error message but you will still be able to proceed with the removal. However, you will need to delete remaining database components manually.*

***Note:*** *The removal may fail in Windows 7 due to insufficient privileges. In that case it may help to turn off UAC temporarily.*

## Remaining UNICORN objects after the installation is removed

After removing a UNICORN installation some parts will still remain in the installation folder, for example logs. Database backups are also saved and not removed. If desired, these objects must be removed manually.

## Removing additional software components

Some software components required to operate UNICORN cannot be removed automatically by the installation wizard. This is because the same components may be used for other purposes as well as for UNICORN. The components may also have been updated after the original installation, and UNICORN can no longer determine that they were part of the installation package. If needed, the components listed below must be removed manually:

- Microsoft .Net Framework 3.5 SP1 (including all language versions).
- Microsoft Visual C++ 2005 Redistributable Package
- Microsoft SQL Server 2008 Express Edition
- MadCap Help Viewer
- OPC core components
- GE Healthcare Software Licensing Server

  (Note that this may be used for other e-licensed software, for example DeCyder™)

The table below describes how to remove the components manually.

| Step | Action |
|---|---|
| 1 | Open the Windows Control Panel. |
| 2 | Double-click the Add or Remove Programs icon.<br>Result: The Add or Remove Programs dialog opens. All programs installed on the client computer are listed. |
| 3 | Select the software component from the list and click the Change/Remove button. |
| 4 | Follow the instructions in the dialogs that open, until the software is removed. |

# 3 Configure systems and set up users and licenses

## Introduction

This chapter describes the administration aspects of a UNICORN 6.1 installation, for example how to define systems and how to assign different access levels to the users. Finally, some administrative operations for the license server are described.

## In this chapter

This chapter contains these sections:


| Section | See page |
|---|---|
| 3.1 System administration | 133 |
| 3.2 User setup | 159 |
| 3.3 License server administration | 187 |

# 3.1 System administration

## Introduction

This section describes mainly

- how to edit system properties
- how to maintain the ***Instrument Configurations***
- how to define systems (after installation)
- how to view, edit and export log files of the UNICORN system activity and
- how to edit the default system settings for selected instruments.

## Contents

This table describes the contents of this section:


| Section | See page |
|---|---|
| 3.1.1 System properties | 134 |
| 3.1.2 Instrument Configurations | 141 |
| 3.1.3 Define a new system | 144 |
| 3.1.4 System Settings | 147 |
| 3.1.5 UNICORN and System logs | 152 |

# 3.1.1 System properties

## General guidelines

- System properties are used to define the ÄKTA avant instruments in a UNICORN installation. The system properties must be defined for each new instrument that is installed.
- The system properties will depend on the Instrument Configuration that is used. The Instrument Configuration defines the instrument components that are available for selection in UNICORN. (Installation of optional components is described in the *"ÄKTA avant and UNICORN 6.1 User Manual"*)
- In a network installation, the system properties must be defined for each local instrument server computer in the network.

***Note:*** *Access rights to a system are controlled at the user administration level, see* *Section 3.2.2 Access items, on page 165*.

---

## Important!

### The UNICORN computer name

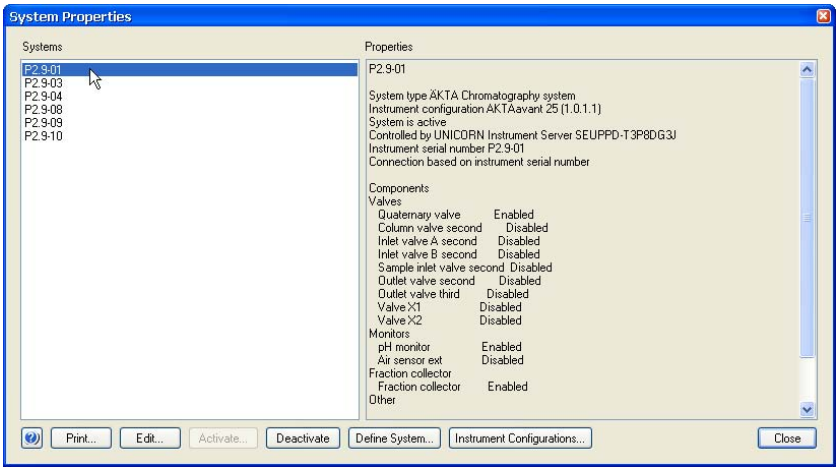
- The computer name in the UNICORN software *must* be the same as the Windows computer name. The Windows computer name is therefore automatically filled in as the UNICORN instrument server name when you define a new system.
- Only common alphabetical letters (a-z) and numbers should be used for computer names.
- If an instrument server computer is changed for some reason, you must edit the corresponding system properties and change the computer name.

---

# Possible actions in the System Properties dialog

System properties are shown in the ***System Properties*** dialog in the ***Administration*** module.

- Choose ***Tools:System Properties*** or click the ***System Properties*** icon to open the dialog. See illustration below:




***Note:*** *To access this dialog, you must belong to an* ***Access Group*** *with* ***System Properties*** *access, see Section 3.2.2 Access items, on page 165.*

## Possible actions

The table below describes the actions you can perform in the **System Properties** dialog. Each action is described further on in this section.

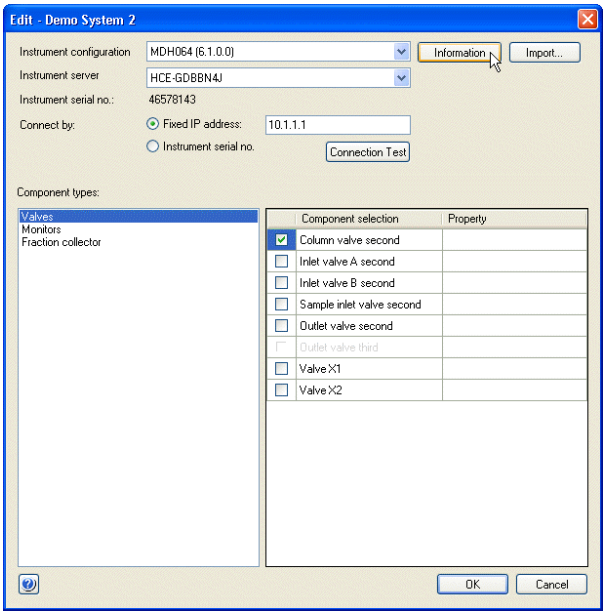
| If you want to... | then click the button |
|---|---|
| print the system properties for the selected system | ***Print*** |
| edit system properties | ***Edit*** |
| activate an inactivated system | ***Activate*** |
| deactivate a system | ***Deactivate*** |
| define a new system<br>(see *Section 3.1.3 Define a new system, on page 144* for details) | ***Define System*** |

| If you want to... | then click the button |
|---|---|
| view, import or delete instrument configurations<br>(see *Section 3.1.2 Instrument Configurations, on page 141* for details) | ***Instrument Configurations*** |

## Edit system properties

The table below describes how to edit the properties of a system:

| Step | Action |
|---|---|
| 1 | • Select a system in the ***System Properties*** dialog.<br>***Note:*** *Only active systems can be edited.*<br>• Click the ***Edit*** button.<br>*Result*: The ***Edit*** dialog is displayed. |



| Step | Action |
|---|---|
| 2 | **Set up instrument configuration and server connection**<br>• Select the desired instrument configuration from the ***Instrument configuration*** droplist menu.<br>**Tip:** Click the ***Information*** button for details about the configuration. Click the ***Import*** button to import a new configuration. This is described in *Section 3.1.2 Instrument Configurations, on page 141*.<br>• Select the desired server computer from the ***Instrument server*** droplist menu.<br>Choose the connection type:<br>- ***Fixed IP address***<br>or<br>- ***Instrument serial no***<br>(This is explained in *Section 3.1.3 Define a new system, on page 144*) |
| 3 | **Set up instrument components**<br>Select a ***Component type*** from the list.<br>*Result:* All available components of this type are shown in the ***Component selection*** list.<br>• Click the checkboxes to select or de-select components.<br>• When applicable, choose the appropriate ***Property*** for a selected component.<br>(e.g. position ***Before sample pump*** or ***After injection valve*** for ***Air sensor ext***) |
| 4 | Click the ***OK*** button to apply the changes. |

## Activate or deactivate systems

Once a system is defined in a UNICORN 6.1 database, it will remain there and cannot be deleted or removed. However, the system may either be activated or deactivated.

### Activated systems

A system must be activated to be available for use. To be activated, the system must include an assigned instrument server computer as well as the instrument, which is identified either by a fixed IP adress or a serial number.

When an instrument server is assigned to a system, it cannot be used to define another active system. The instrument server can only be connected to one instrument at a time. When activating a system, only free instrument servers will be available for selection.

***Note:*** *If several database instances are in use a system shall never be defined in more than one database instance. Doing so would make the system logs incomplete and might cause inresolvable conflicts.*

***Note:*** *It is possible to define a deactivated system for an instrument server which already has an assigned, active system. This option will be suggested if you try to define a new system when an active system is already defined. A new, inactivated system can be used for example when converting and scaling methods for use with another database than the one that it originally was created for. This is described in the UNICORN 6.1 Method Manual.*

### Deactivated systems

When an instrument is taken out of use, for example for maintenance or repair, the corresponding system should be deactivated in the ***System Properties*** dialog. The system will remain in the list and it will be connected to the identity of the instrument. It will no longer have an assigned instrument server and is not available for use.

If an instrument server computer is taken out of use, the system can be edited and the instrument server computer name changed.

If an instrument is permanently taken out of use, the corresponding system should be deactivated. The system cannot be used for a replacement instrument.

The table below describes how to deactivate and activate systems:

| If you want to... | Then... |
|---|---|
| deactivate a system | • select the system in the ***Systems*** list<br>• click the ***Deactivate*** button<br>and<br>• confirm that you want to deactivate the system.<br>***Result:*** A confirmation message is shown. You can now turn off the power to the instrument safely. |

| If you want to... | Then... |
|---|---|
| activate a system | • select the system in the ***Systems*** list<br>and<br>• click the ***Activate*** button.<br>*Result:* The ***Activate*** dialog opens.<br>• Choose the appropriate ***Instrument configuration*** from the droplist menu<br>• choose the appropriate ***Instrument server*** from the droplist menu<br>and<br>• click ***OK***.<br>***Result:*** A confirmation message is shown and the system is now activated. |

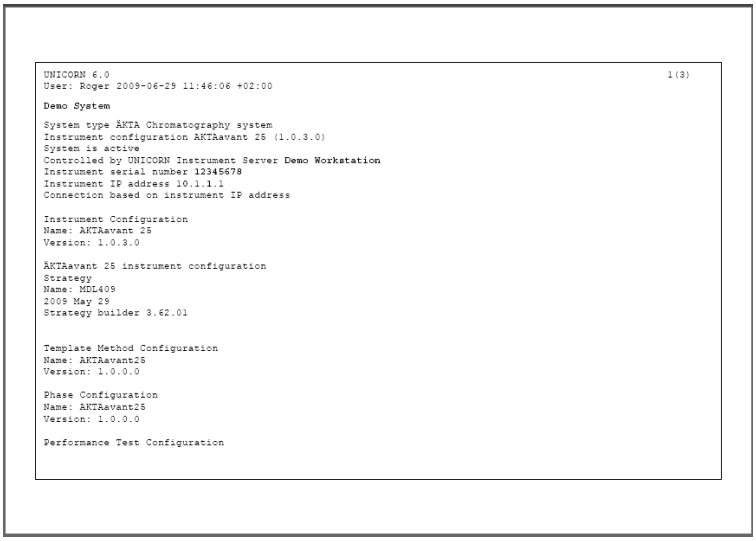
## Print a system summary

You can print a total summary of a selected system from the ***System Properties*** dialog.

The table below describes how to do this:

| Step | Action |
|---|---|
| 1 | • Select the system in the ***Systems*** list<br>and<br>• click the ***Print*** button.<br>*Result*: The ***Print*** dialog is displayed. |

| Step | Action |
|---|---|
| 2 | • Choose a printer from the ***Printer*** dropdown list<br>and<br>• click the ***OK*** button.<br>*Result*: A summary report similar to the example below is printed on the selected printer: |



```
UNICORN 6.0                                                    1(3)
User: Roger 2009-06-29 11:46:06 +02:00

Demo System

System type ÄKTA Chromatography system
Instrument configuration ÄKTAavant 25 (1.0.3.0)
System is active
Controlled by UNICORN Instrument Server Demo Workstation
Instrument serial number 12345678
Instrument IP address 10.1.1.1
Connection based on instrument IP address

Instrument Configuration
Name: ÄKTAavant 25
Version: 1.0.3.0

ÄKTAavant 25 instrument configuration
Strategy
Name: MDL409
2009 May 29
Strategy builder 3.62.01


Template Method Configuration
Name: AKTAavant25
Version: 1.0.0.0

Phase Configuration
Name: AKTAavant25
Version: 1.0.0.0

Performance Test Configuration
```

**Tip:** Print the report in landscape format. Some parts of the report may not align properly if the report is printed in portrait format.

# 3.1.2 Instrument Configurations

## Introduction

This section explains some of the concepts where the UNICORN 6.1 ***Instrument configurations*** for ÄKTA avant differ from corresponding configurations used in earlier UNICORN versions.

The section also describes how to import new ***Instrument Configurations***, with updated or customized instructions and phase libraries. Finally, it describes how to delete ***Instrument Configurations*** that are no longer in use and which are obsolete.

## About Instrument Configurations

UNICORN is a common software platform for a number of different instrument types and configuration. In previous versions, the system-specific parts of the software were referred to as the ***Strategy***. The ***Strategy*** contains the definitions for all the instructions, settings and options relevant for a specific instrument version.

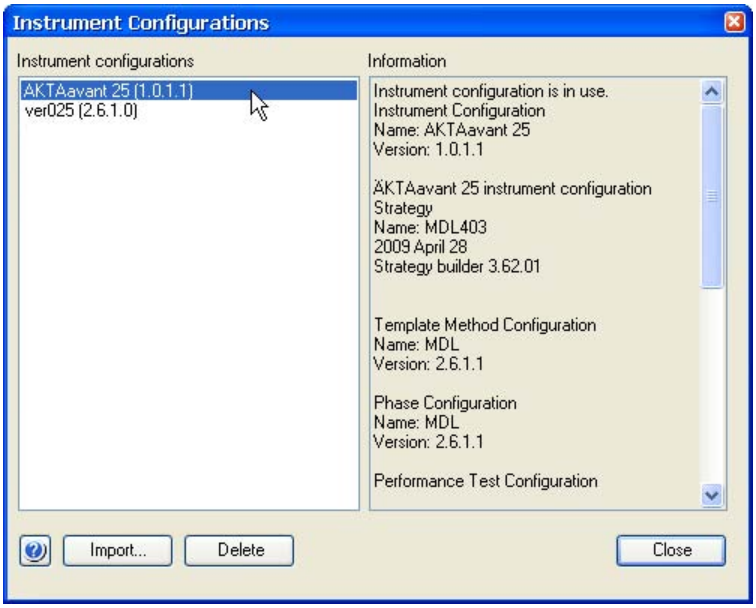
As a further development, UNICORN 6.0 introduced the ***Instrument Configuration***, which is used for ÄKTA avant instruments. This configuration includes a strategy but also other elements which are listed in the table below:

| Previous UNICORN instrument configurations | ÄKTA avant instrument configuration for UNICORN 6.1 | Description |
|---|---|---|
| ***Strategy*** | ***Strategy*** | The software instruction set which controls the instrument. |
| ***Process Picture*** | ***Flow scheme*** | The graphic elements which are used to build the flow schemes in the ***Method Editor*** and ***System Control*** modules. |
| | ***Phase Library*** | The phase library contains predefined phases and methods adapted to the available options for the specific instrument configuration. |
| | Embedded software | For ÄKTA avant, the hardware control units (e.g. CU950) are replaced by software. |

***Note:*** *Instrument configurations for UNICORN 6.0 are not compatible with UNICORN 6.1.*

# Import an Instrument Configuration

The table below describes how to import an ***Instrument Configuration***

| Step | Action |
|---|---|
| 1 | Click the ***Instrument Configurations*** button in the ***System Properties*** dialog.<br>*Result:* The ***Instrument Configurations*** dialog opens.<br>  |
| 2 | Click the ***Import*** button.<br>*Result:* The ***Select Instrument Configuration Import Files*** dialog opens. |
| 3 | • Locate and select the import files (the files are stored in a .zip archive)<br>• Click the ***Open*** button.<br>*Result:* The new configuration files are uploaded into the database and the configuration is available for selection. A progress dialog is displayed during this process. |
| 4 | Select the new configuration from the ***Instrument configuration*** droplist menu. |
| 5 | Click ***OK*** to apply the change and close the dialog. |

***Note:*** *You must edit the system properties and select the new instrument configuration for each system that should use the new configuration.*

## Delete an Instrument Configuration

The table below describes how to delete an obsolete ***Instrument Configuration***.

***Note:*** *You cannot delete an* ***Instrument Configuration*** *that is in use.*

| Step | Action |
|---|---|
| 1 | Click the ***Instrument Configurations*** button in the ***System Properties*** dialog.<br>*Result:* The ***Instrument Configurations*** dialog opens. |
| 2 | • Select the obsolete ***Instrument Configuration***<br>and<br>• click the ***Delete*** button.<br>***Result:*** After you confirm the operation, the obsolete configuration is deleted from the database. |

# 3.1.3 Define a new system

## Introduction

If you haven't defined a system at the UNICORN installation, or if you want to add a new system at a later time, you can do this from the ***System Properties*** dialog in the ***Administration*** module.

***Note:*** *You can only define one active system for each instrument server. If you replace an instrument you must first deactivate that system in* ***System Properties*** *as described in* *Activate or deactivate systems, on page 137**.*

*It is possible to define a deactivated system for an instrument server which already has an assigned, active system. This option will be suggested if you try to define a new system when an active system is already defined. A new, inactivated system can be used for example when converting and scaling methods for use with another database than the one that it originally was created for. This is described in the UNICORN 6.1 Method Manual.*

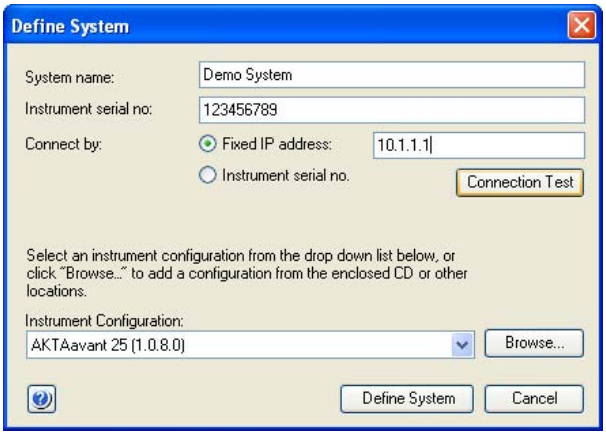
---

## Instruction

The table below describes how to create a new system definition:

***Note:*** *Before defining the system, ensure that the cable between instrument and the correct network interface card is connected properly. To enable connection tests, the instrument should be turned on during the system definition.*

| Step | Action |
|---|---|
| 1 | • Click the ***Define System*** button.<br>*Result:* The ***Define System*** dialog opens. |




| | |
|---|---|
| 2 | Enter a name in the ***System name*** field.<br>***Note:*** *The system name cannot be changed or edited after the system has been defined.* |
| 3 | Enter the serial number for the instrument in the ***Instrument serial no*** field. You will find this number on the labels either on the inside of the swing-out toolbox or on the back of the instrument. |
| 4 | Select how the instrument shall be identified for connections:<br>• Enter the default ***Fixed IP address*** for the instrument (10.1.1.1).<br>***Note:*** *Fixed IP address should always be used for instrument identification. The default address shown above should be used whenever the instrument is connected using a dedicated network interface card.*<br>*In some very specific situations the serial number can be used for instrument identification. If that is the case, or if the instrument will not be connected using a dedicated network interface card, you should contact GE Healthcare Services for advice.* |
| 5 | Click the ***Connection Test*** button.<br>*Result:* The connection between the instrument server station and the instrument is verified. |

| Step | Action |
|---|---|
| 6 | Select the appropriate instrument configuration from the ***Instrument Configuration*** droplist menu.<br>**Tip:** The list includes all instrument configurations currently in the UNICORN database. To select a new instrument configuration:<br>• Insert the instrument configuration CD in your CD-ROM drive.<br>• Click the ***Browse*** button and navigate to the configuration file on the CD.<br>• Select the appropriate configuration file. |
| 7 | Click the ***Define System*** button.<br>*Result:* The system definition settings are saved and the new system is added in the ***System Properties*** dialog as an active system. The instrument server computer must be restarted before the system can be used. |

***Note:*** *If several database instances are used, it is recommended that each system is defined in only one of the database instances.*

# 3.1.4 System Settings

## Introduction

Each installed instrument has a set of default parameter values, called system settings, that can be changed. The ***System Settings*** dialog in ***System Control*** is used to view and edit the system settings for the currently selected instrument before the run is started. This section describes how to edit the system settings, and gives an overview of available system settings.

***Note:*** *System settings depend on the instrument configuration. The system settings shown in this section may differ from the settings that are applicable for your specific instrument configuration.*

---

## Alternative paths for editing System settings

The parameter values defined in ***System Settings*** are used as default values.

Some of the instructions listed in the system settings are also available as method and manual instructions. When a run is started, the parameter values from the system settings are valid. If the same instruction is executed from the method or manually during a run, the parameter value of the new setting will be valid. Thus, it is always the parameter value of the instruction that is executed the latest that will be applied. When the run is ended, the parameter values are reset according to the system settings.

The effect of changing the system settings depends on where it is performed, as described in the table below. This section only describes settings available from ***System:Settings***.

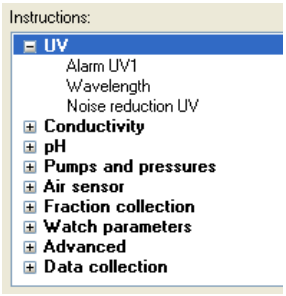
---

## Edit System Settings

Follow the instruction below to edit the ***System Settings***.

| Step | Action |
|---|---|
| 1 | In the ***System Control*** module, select ***System:Settings***. |

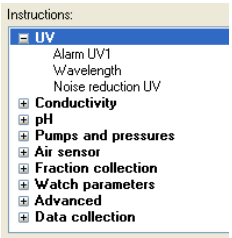
| Step | Action |
|---|---|
| 2 | Select the instruction to edit from the list. Click the + symbol to show the instructions for each category. |
| 3 | Select settings and choose parameter values for the selected instruction. Minimum and maximum values for each parameter are shown within brackets by each field. Click ***OK.*** |
| 4 | To return to the default values defined in the instrument configuration, click ***Set Parameters To Strategy Default Values***. |

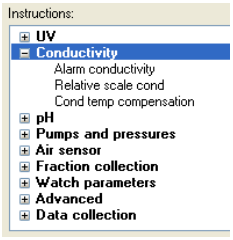
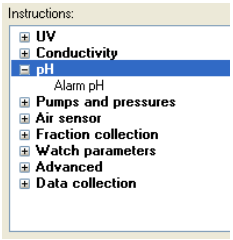
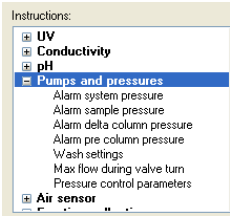


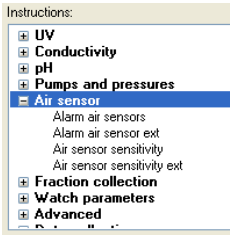
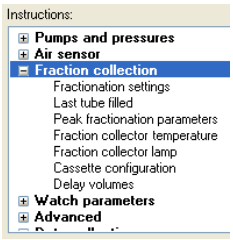

***Note:*** *The System Settings are changed to new default values according to the above instruction. If you instead manually change any of these values for a run in the* ***Text Instructions*** *pane in* ***Method Editor****, or in the* ***Manual Instructions*** *dialog in* ***System Control****, it only affects the current run. Then, the values set in* ***System:Settings*** *are restored after the run.*

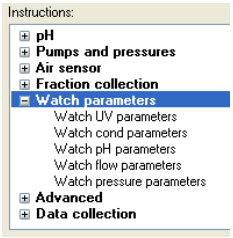
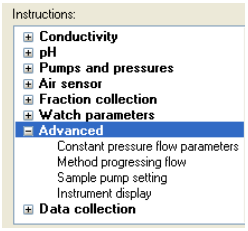
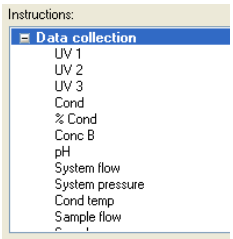
## System Settings parameters

The table below describes the parameters for each category and instruction.

| Instruction | Parameters |
|---|---|
|  | ***UV*** <br> ***Alarm UV1:*** High and low alarm limits <br> ***Wavelength:*** Used wavelengths (max 3) <br> ***Noise reduction UV:*** Averaging time |

| Instruction | Parameters |
|---|---|
|  | ***Conductivity***<br>***Alarm conductivity:*** High and low alarm limits<br>***Relative scale cond:*** Conversion from mS/cm to %<br>***Cond temp compensation:*** Compensation factor and Reference temperature |
|  | ***pH***<br>***Alarm pH:*** High and low alarm limits |
|  | ***Pumps and pressures***<br>***Alarm system pressure:*** Alarm limits for system pumps<br>***Alarm sample pressure:*** Alarm limits for sample pump<br>***Alarm delta column pressure:*** Alarm limits for delta column pressure<br>***Alarm pre column pressure:*** Alarm limits for pre column pressure<br>***Wash settings:*** Flow rate and volume used in System and Sample pump wash<br>***Max flow during valve turn:*** Flow rates during valve turn of Injection valve and Outlet valve<br>***Pressure control parameters:*** P and I factor settings, pressure control target value and minimum flow rate. |

| Instruction | Parameters |
|---|---|
|  | ***Air sensor***<br>***Alarm air sensors:*** Air sensors in Inlet valves (A, B or S, enabled or disabled)<br>***Alarm air sensor ext:*** External air sensor enabled or disabled<br>***Air sensor sensitivity:*** Sensitivities (Normal or High) for air sensors in Inlet valves (A, B or S)<br>***Air sensor sensitivity ext:*** Sensitivity for external air sensor |
|  | ***Fraction collector***<br>***Fractionation settings:*** Fractionation mode (Accumulator or DropSync). Fractionation order (Row-by-row, Column-by-column, Serpentine-row, Serpentine-column). When DropSync is selected, only Serpentine can be selected.<br>***Last tube filled:*** Action when last tube is filled (Pause, fractionation to Outlet valve ports, or to waste)<br>***Peak fractionation parameters***: Parameters for Peak fractionation (Mode: Level and/or Slope, Minimum peak width, Start and End values)<br>***Fraction collector temperature:*** Fraction collector temperature (On or Off, Target temperature settings between 6 and 20°C)<br>***Fraction collector lamp:*** Lamps in Frac chamber on or off<br>***Cassette configuration:*** Automatic or Manual configuration. If Automatic is selected, a Quick scan and Full scan will be performed when the frac drawer is closed to determine which type of cassettes and plates are used. If Manual is selected, used plates and tubes in each tray position are entered.<br>***Delay volumes:*** Delay volumes between UV detector and Frac/Outlet valve, and volume of the Flow restrictor and pH flow cell. |

| Instruction | Parameters |
|---|---|
|  | ***Watch parameters:*** Parameters for Watch for UV, Cond, pH, Flow and Pressure |
|  | ***Advanced***<br>***Constant pressure flow parameters: P*** (proportional) and ***I*** (integral) factor settings for pressure control.<br>***Method progressing flow:*** Defines the flow from which the volume base is calculated. Can be set either to ***System flow***, ***Sample flow*** or ***Automatic***. When ***Automatic*** is selected, the position of the injection valve determines if the system flow or the sample flow is used.<br>***Sample pump setting:*** If ***Yes*** is selected, a sample flow may be run while the injection valve in in position Manual load. Default setting is ***No***.<br>***Note:*** *The tubing must be arranged accordingly if a sample flow is run while the injection valve is in position Manual load.*<br>***Instrument display:*** Locked or Unlocked<br>***Note:*** *Some of the **Advanced** instructions will only be available if the option **Advanced instructions** is selected in the **Other** group of **Component types** in the **System Properties**.* |
|  | ***Data collection:*** Maximum number of data points for each parameter.<br>***Note:*** *When the maximum number of data points has been reached, data reduction is performed by deleting every second data point, and data collection is continued.*<br>*This is described further in* *Section A.3 Data sampling, on page 248* |

# 3.1.5 UNICORN and System logs

## Purpose

The UNICORN, system, run and result related logs provide the system administrator with a full record of UNICORN usage and system activity.

## The different types of logs

There are three types of logs:

- ***UNICORN logs***

  which record all system independent events,

- ***System logs***

  which record events related to specific systems

  and

- ***Run*** and ***Evaluation*** logs

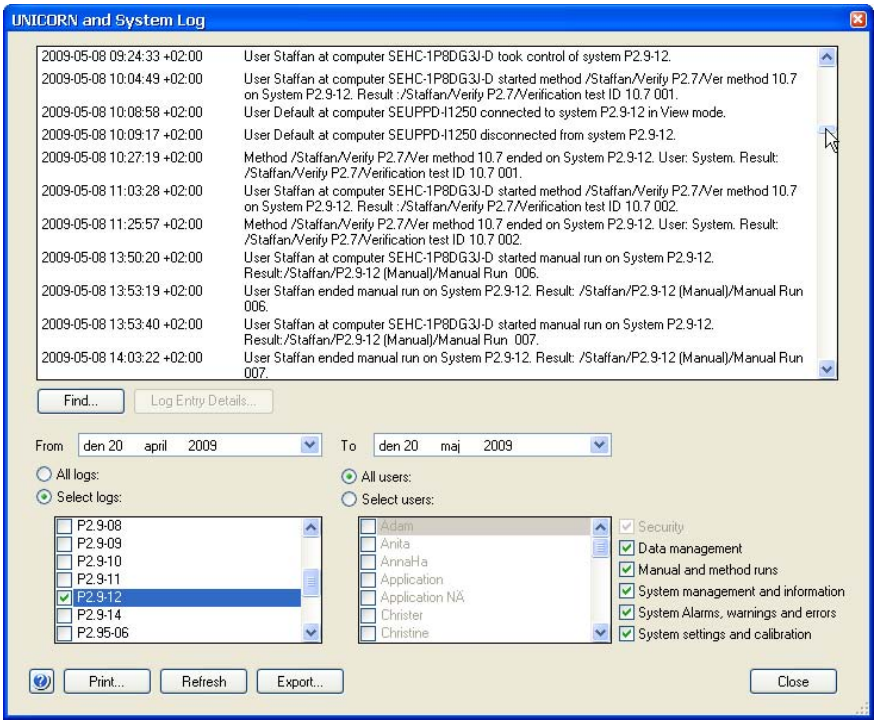
  which record events related to specific results. The ***Run*** log shows events from the run connected to the result, and the ***Evaluation*** log shows the evaluation actions that have been applied to the result.

The UNICORN and system logs are available in the UNICORN ***Administration*** module, by clicking the ***UNICORN and System Log*** icon.

The ***Run*** and ***Evaluation*** logs are available in the ***Documentation*** dialog. This dialog is opened from the ***System Control*** or the ***Evaluation*** module by clicking the ***View Documentation*** icon.

## UNICORN and System Log dialog

The ***UNICORN and System Log*** dialog is illustrated below.


UNICORN and System Log
2009-05-08 09:24:33 +02:00 User Staffan at computer SEHC-1P8DG3J-D took control of system P2.9-12.
2009-05-08 10:04:49 +02:00 User Staffan at computer SEHC-1P8DG3J-D started method /Staffan/Verify P2.7/Ver method 10.7 on System P2.9-12. Result :/Staffan/Verify P2.7/Verification test ID 10.7 001.
2009-05-08 10:08:58 +02:00 User Default at computer SEUPPD-I1250 connected to system P2.9-12 in View mode.
2009-05-08 10:09:17 +02:00 User Default at computer SEUPPD-I1250 disconnected from system P2.9-12.
2009-05-08 10:27:19 +02:00 Method /Staffan/Verify P2.7/Ver method 10.7 ended on System P2.9-12. User: System. Result: /Staffan/Verify P2.7/Verification test ID 10.7 001.
2009-05-08 11:03:28 +02:00 User Staffan at computer SEHC-1P8DG3J-D started method /Staffan/Verify P2.7/Ver method 10.7 on System P2.9-12. Result :/Staffan/Verify P2.7/Verification test ID 10.7 002.
2009-05-08 11:25:57 +02:00 Method /Staffan/Verify P2.7/Ver method 10.7 ended on System P2.9-12. User: System. Result: /Staffan/Verify P2.7/Verification test ID 10.7 002.
2009-05-08 13:50:20 +02:00 User Staffan at computer SEHC-1P8DG3J-D started manual run on System P2.9-12. Result:/Staffan/P2.9-12 (Manual)/Manual Run 006.
2009-05-08 13:53:19 +02:00 User Staffan ended manual run on System P2.9-12. Result: /Staffan/P2.9-12 (Manual)/Manual Run 006.
2009-05-08 13:53:40 +02:00 User Staffan at computer SEHC-1P8DG3J-D started manual run on System P2.9-12. Result:/Staffan/P2.9-12 (Manual)/Manual Run 007.
2009-05-08 14:03:22 +02:00 User Staffan ended manual run on System P2.9-12. Result: /Staffan/P2.9-12 (Manual)/Manual Run 007.
Find...
Log Entry Details...
From den 20 april 2009
To den 20 maj 2009
All logs:
Select logs:
P2.9-08
P2.9-09
P2.9-10
P2.9-11
P2.9-12
P2.9-14
P2.95-06
All users:
Select users:
Adam
Anita
AnnaHa
Application
Application NA
Christer
Christine
Security
Data management
Manual and method runs
System management and information
System Alarms, warnings and errors
System settings and calibration
Print...
Refresh
Export...
Close

**Tip:** Click the ***Refresh*** button to update the displayed events to the latest records.

## View selected log entries

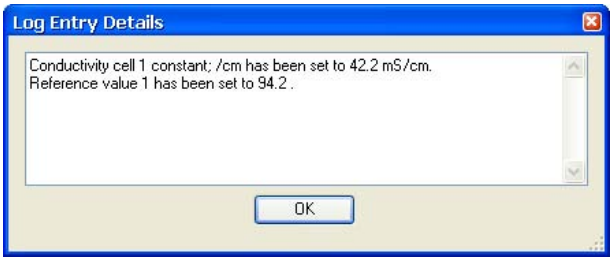
By default, the ***UNICORN and System Log*** dialog will show all log entries, for UNICORN, all systems and all users for a month before today's date. You can select specific log entries for display, to be able to view only the items of interest. You can also combine selections to narrow down the displayed items, for example to the log entries for a specific user at a specific system on a specific date.

The table below describes how select specific log entries for display:

| If you want to view log entries... | Then... |
|---|---|
| from a specific time period | • click the down arrow by the ***From*** field and select the starting date for the time period in the calender<br>and<br>• click the down arrow by the ***To*** field and select the ending date. |
| for specific systems | • click the ***Select logs*** option button<br>and<br>• select one or several systems from the list below. |
| from the UNICORN log | • click the ***Select logs*** option button<br>and<br>• select UNICORN from the list below. |
| for specific users | • click the ***Select users*** option button<br>and<br>• select one or several users from the list below. |
| generated by the system | • click the ***Select users*** option button<br>and<br>• select ***System*** from the list below. |

| If you want to view log entries... | Then... |
|---|---|
| for specific events | select one or several of the items below:<br>• ***Security***<br>(log on/log off entries, password changes etc.)<br>• ***Data management***<br>(folder, method and result activities, for example create, copy, changes etc.)<br>• ***Manual and method runs***<br>(run start and end, created results etc.)<br>• ***System management and information***<br>(connections, session start end end, create new, activate or deactivate systems etc.)<br>• ***System Alarms, warnings and errors***<br>(alarm and error descriptions, acknowledgement and action records etc.)<br>• ***System settings and calibration***<br>(changed settings and calibration actions) |

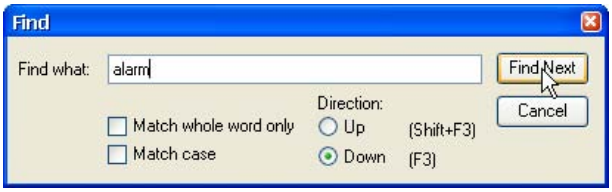
Long entries in the logs may sometimes be shown only in part, ending the entry with four period characters (that is: "**....**"). Select the entry and double-click the ***Log Entry Details*** button to view the remaining information. This button is enabled when the log entry is selected. The detail information is shown in a separate dialog:




**Tip:** The complete entries will be included in printed logs.

## Find specific log entries

You can search for specific log entry text by clicking the ***Find*** button and entering text to search for in the ***Find what*** field of the ***Find*** dialog:




## Export logs

You can export the selected log entries to an XML file by clicking the ***Export*** button. Using the XML file format, the log entries can be imported into XML-based reporting systems.

## Archive logs

To reduce the size of the logs, you can choose to archive older records. The archiving procedure is part of the ***Database Management*** routines, and it is described in *Section 4.2.3 Archive data, on page 202*. If needed, you may retrieve the archived logs by using the ***Database Management*** retrieval procedure.

***Note:*** *You can only retrieve logs to the same database that they were originally archived from. That is, you cannot use the retrieval procedure to import logs from one database to another.*

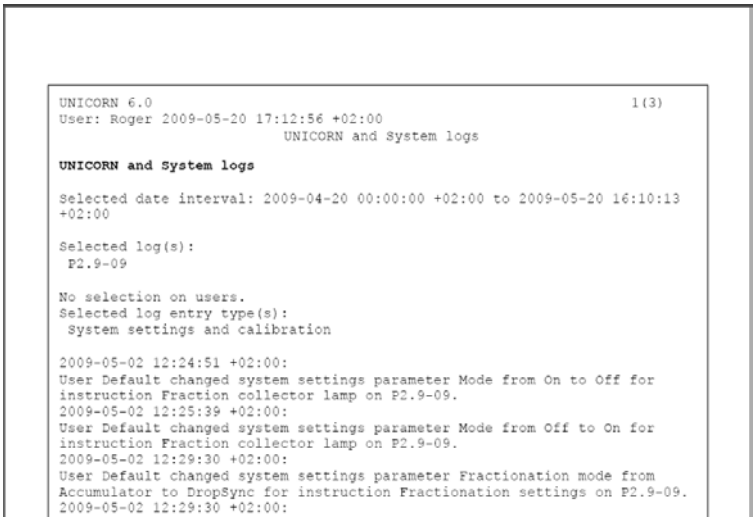
***Note:*** *It is a recommendation that all archived logs are saved on a different hard drive than where the active database is stored.*

## Print the logs

The table below describes how to print selected log entries:

| Step | Action |
|---|---|
| 1 | Select the log entries you want to include in the print. |
| 2 | Click the ***Print*** button.<br>*Result:* The ***Print*** dialog opens |

| Step | Action |
|---|---|
| 3 | • Select a printer from the dropdown list<br>• If desired, click the ***Properties*** button and select printer settings and<br>• Click the ***OK*** button.<br>*Result:* The selected log entries are printed. |



```
UNICORN 6.0                                                    1(3)
User: Roger 2009-05-20 17:12:56 +02:00
                          UNICORN and System logs

UNICORN and System logs

Selected date interval: 2009-04-20 00:00:00 +02:00 to 2009-05-20 16:10:13
+02:00

Selected log(s):
 P2.9-09

No selection on users.
Selected log entry type(s):
 System settings and calibration

2009-05-02 12:24:51 +02:00:
User Default changed system settings parameter Mode from On to Off for
instruction Fraction collector lamp on P2.9-09.
2009-05-02 12:25:39 +02:00:
User Default changed system settings parameter Mode from Off to On for
instruction Fraction collector lamp on P2.9-09.
2009-05-02 12:29:30 +02:00:
User Default changed system settings parameter Fractionation mode from
Accumulator to DropSync for instruction Fractionation settings on P2.9-09.
2009-05-02 12:29:30 +02:00:
```

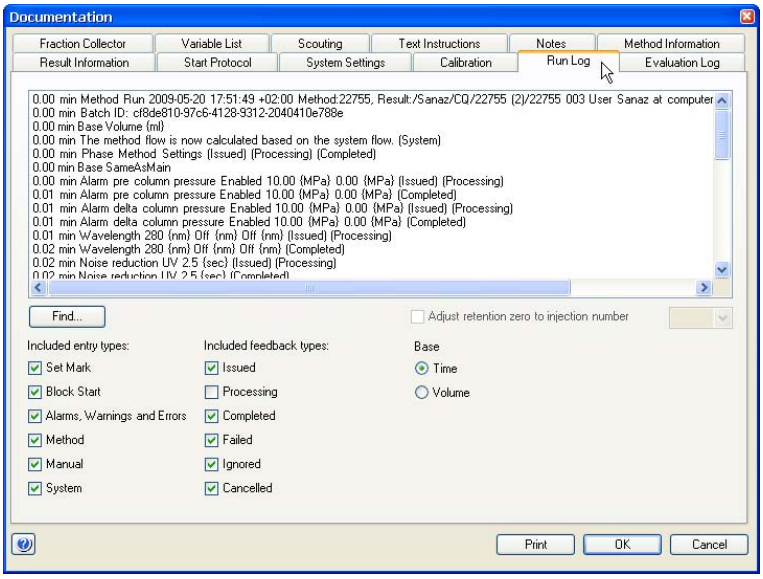
## Run and Evaluation logs

Log information for specific runs and results can be found in the ***Documentation*** dialog, available in the ***Evaluation*** and ***System Control*** modules.

The table below describes how to open the ***Documentation*** dialog:

| Step | Action |
|---|---|
| 1 | Open the ***Evaluation*** module or the ***System Control*** module.<br>***Note:*** *In **Evaluation** you must open a result to access the documentation which is included in that specific result. In **System Control** you can view the documentation for a run while it is in progress.* |

| Step | Action |
|---|---|
| 2 | Click the ***View Documentation*** icon.<br>*Result*: The ***Documentation*** dialog is opened. |
| 3 | Select the ***Run Log*** or the ***Evaluation Log*** tab to view log entries from the run or from the evaluation of the result: |




**Tip:** Select entry and feedback types to show only the entries of interest.

You can also select to adjust the retention scale to a specific injection number.

# 3.2 User setup

## Introduction

Access to the UNICORN software is controlled by username and password authorization. This is done from within UNICORN, where each authorized user is assigned to an access group that determines which functions the user can perform.

## Contents

The table below describes the contents of this section:


| Section | See page |
|---|---|
| 3.2.1 User access groups | 160 |
| 3.2.2 Access items | 165 |
| 3.2.3 Create a new user | 167 |
| 3.2.4 User options | 176 |
| 3.2.5 User passwords and account access limitations | 180 |
| 3.2.6 Delete users and folders | 185 |

# 3.2.1 User access groups

## Introduction

This section describes

- the purpose of access groups and access items
- how to view and edit the access groups

---

## Access groups types

A UNICORN installation has different access groups with different rights to perform actions in the UNICORN system. Some access groups are predefined, for example the ***Administrators*** group. New access groups may be created as needed, and the access rights for each group may be edited to suit the duties for each user group.

---

## The access items

The access items are used to assign rights to the access groups. How to assign rights to the access groups is described in *Edit or create new access groups* below.

Access items are described further in *Section 3.2.2 Access items, on page 165*.

---

## The User Setup dialog

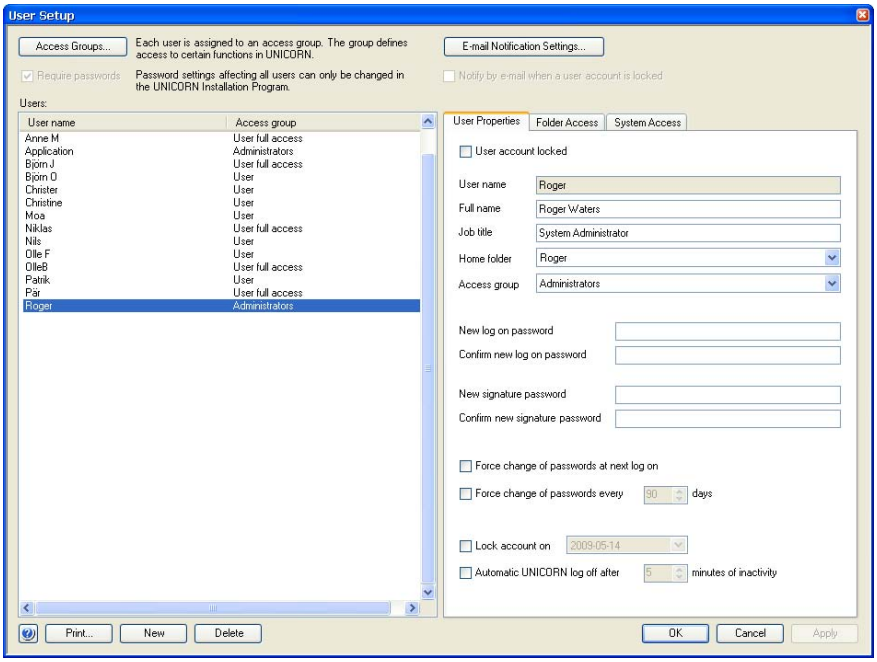
From the ***User Setup*** dialog you can

- see which access group each user belongs to
- view the access level of each access group
- edit or create new user access groups.

***Note:*** *Other actions which can be performed from the **User Setup** dialog are described in subsequent sections of this chapter.*

### Open the dialog

Choose ***Tools:User Setup*** or click the ***User Setup*** icon in the ***Administration*** module when you want to display the ***User Setup*** dialog. See illustration below:

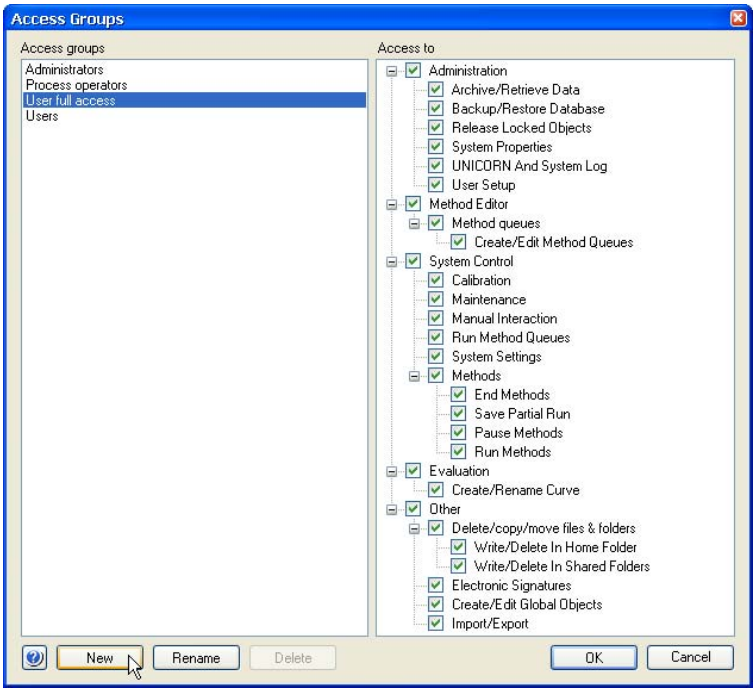



## View the access groups

To view the access groups, you must have ***Administration*** module and ***User Setup*** access. See *Section 3.2.2 Access items, on page 165* for an explanation of the access items.

The table below describes how to view the access groups and their properties:

| Step | Action |
|---|---|
| 1 | Choose ***Tools:User Setup*** or click the ***User Setup*** icon in the ***Administration*** module.<br>*Result*: The ***User Setup*** dialog is displayed. |

| Step | Action |
|---|---|
| 2 | Click the ***Access Groups*** button.<br>*Result*: The ***Access Groups*** dialog is displayed:<br>  |
| 3 | Select a group in the left field to view its access items in the right field (***Access to***).<br>***Note:*** *The access items that are valid for the group have selected checkboxes.* |

## Edit or create new access groups

With UNICORN, you can create any number of access groups, all assigned to different levels of access to UNICORN. For practical reasons, it is recommended to only use a limited number of groups that correspond to the different job descriptions in your organization.

The table below describes how to create new or edit existing access groups:

| Step | Action |
|---|---|
| 1 | Choose ***Tools:User Setup*** or click the ***User Setup*** icon in the ***Administration*** module.<br>*Result*: The ***User Setup*** dialog is displayed. |
| 2 | Click the ***Access Groups*** button.<br>*Result*: The ***Access Groups*** dialog is displayed. |
| 3 | In the ***Access Groups*** dialog you can perform all of the actions described below:<br>**Create a new group**<br>• Click the ***New*** button.<br>*Result:* A group is added to the list, with the name "New user group".<br>• Enter a new name and choose access items as described below.<br>**Change the name of a group**<br>• Select the group in the ***Access groups*** field of the dialog.<br>• Click the ***Rename*** button.<br>• Type the new name over the original name.<br>***Note:*** *You cannot change the name of a predefined access group.*<br>**Choose access items for a group**<br>• Select the group in the ***Access groups*** field of the dialog.<br>• Select the checkboxes in the ***Access to*** field, to choose access items.<br>***Note:*** *If you edit the definition of an access group to which users are already assigned, the changes will apply to all users in the group.*<br>**Delete a group**<br>• Select the group in the ***Access groups*** field of the dialog.<br>• Click the ***Delete*** button.<br>• Confirm that you want to delete the group in the dialog that opens.<br>***Note:*** *You cannot delete the **Administrator** group.* |
| 4 | Click the ***OK*** button to apply the changes.<br>***Note:*** *Any changes concerning users that are logged on when the change is made will be applied the next time they log on to UNICORN.* |

## Special conditions

Certain access items cannot be completely removed:

- ***User Setup***

  At least one access group must have this access item. UNICORN will not allow you to remove this access item from all access groups.

# 3.2.2 Access items

## What is an access item?

An access item specifies an action that the user is allowed to perform in the UNICORN system. The access items are assigned to the user access groups in the ***Access Groups*** dialog, see *Section 3.2.1 User access groups, on page 160*.

To view the access items in the ***Administration*** module,

- choose ***Tools:User Setup***

  or

- click the ***User Setup*** icon

  and

- click the ***Access Groups*** button in the ***User Setup*** dialog.

  *Result*: The access items are listed in the ***Access to*** field.

---

## Description of the access items

The table below describes each access item:

| Access area | Access items in this area allow the user to |
|---|---|
| ***Administration*** | • archive and to retrieve archive data<br>• backup a database and to restore backups<br>• release data objects that have been locked by a user<br>• edit system properties<br>• access UNICORN and system logs<br>• perform user setup |
| ***Method Editor*** | • create and edit method queues |

| Access area | Access items in this area allow the user to |
|---|---|
| ***System Control*** | • calibrate monitor settings<br>• perform maintenance operations<br>• run the system manually<br>• run method queues<br>• edit system settings<br>• perform actions during method runs:<br>- end methods<br>- save partial runs [6]<br>- pause methods<br>- run methods |
| ***Evaluation*** | • create and rename curves |
| ***Other*** (general) | • delete, copy and move files and folders<br>- only in the user's own Home folder<br>- in shared folders also<br>• sign methods and results electronically<br>• create and edit objects that are available to all users (global objects, for example phases, evaluation procedures etc.)<br>• import and export items, for example methods or results |

***Note:*** *A user group may have access to all items in any area, or only selected items. User groups with specific duties may only have access to a certain area and will then be unable to open or access the other UNICORN software modules.*

6 By default, partial runs will be saved. This access item allows the user to choose not to save a partial run if desired.

# 3.2.3 Create a new user

## Introduction

This section describes how to create a new user and assign user properties, folder and system access.

## The Default user

A ***Default*** user is created when the system is installed. The ***Default*** user is assigned to the ***Administrators*** access group with unrestricted access to all UNICORN functions. You log on with this profile when you access a newly installed system for the first time.

***Note:*** *The **Default** user should be deleted when regular user profiles have been created.*

The table below describes how to log on as the default user:

| Step | Action |
|---|---|
| 1 | Start UNICORN. |
| 2 | • Select user ***Default*** from the ***User name*** droplist menu. |

• Type the password `default`.

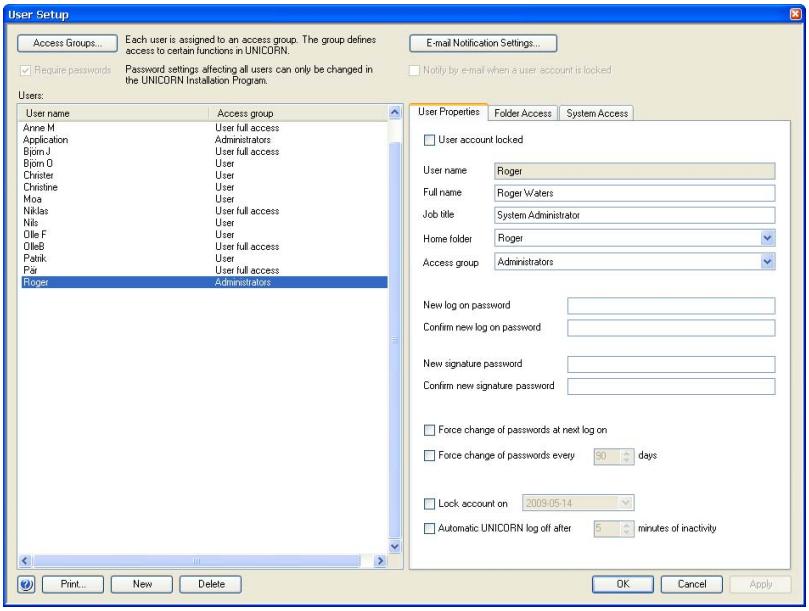
• Click ***OK***.

***Note:*** *The **Default** user is the only user where the user name and the password can be identical.*

# The User Setup dialog

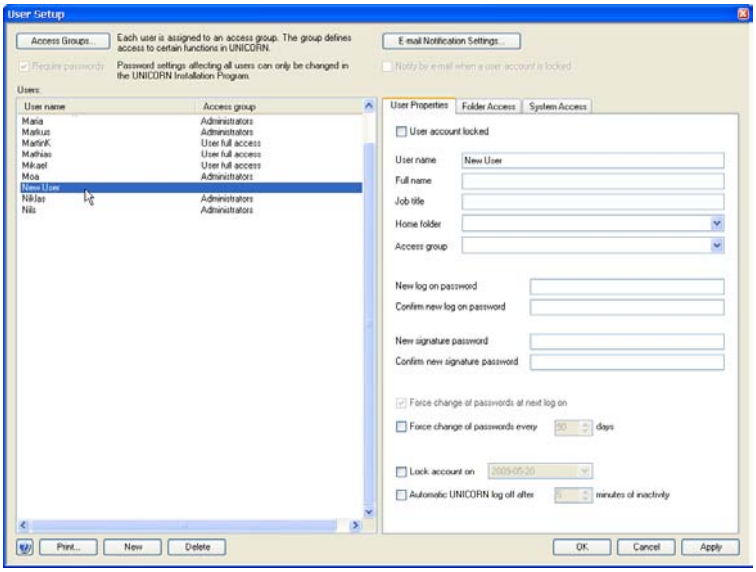
All user administration is performed in the ***User Setup*** dialog in the ***Administration*** module. It is accessible only to authorized users (and the default user).

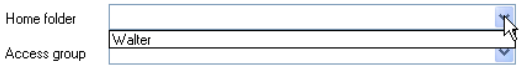
- Choose ***Tools:User Setup*** or click the ***User Setup*** icon in the ***Administration*** module when you want to display the ***User Setup*** dialog. See illustration below:



## Instruction

The table below describes how to create a new user:

| Step | Action |
|---|---|
| 1 | Click the ***New*** button in the ***User Setup*** dialog.<br>*Result*: A ***New User*** is added to the ***Users*** list:<br>  |
| 2 | Enter information about the new user in the ***User Properties*** tab:<br>• Type a user name in the ***User name*** field.<br>• Type the full name of the user in the ***Full name*** field.<br>• Type the job title of the user in the ***Job title*** field. |

| Step | Action |
|---|---|
| 3 | **Create a Home folder**<br>• Select the ***Folder Access*** tab.<br>• Click the ***New Top Folder*** button.<br>*Result:* A folder called ***New Folder*** is added to the list.<br>• Type a new name over the ***New Folder*** text, for example the name of the new user.<br>• Select the checkbox for the folder so it will be accessible for selection.<br>**Select a Home folder**<br>• Select the ***User Properties*** tab again.<br>• Click the droplist arrow in the ***Home folder*** field to display a list of the accessible folders:<br>  <br>• Select the home folder for the new user. |
| 4 | Click the droplist arrow in the ***Access group*** field and choose an access group from the menu.<br>See also section *Section 3.2.1 User access groups, on page 160*. |
| 5 | • Enter a ***New log on password***.<br>• Confirm the password by typing it again in the field below.<br>***Note:*** *This password will be used only the first time the user logs on. The user will be asked to enter a new password at that time.*<br>See section Change user passwords and user options for information about additional password and account lock settings. |
| 6 | If the user will be authorized to sign electronically:<br>• Enter a ***New signature password***.<br>• Confirm the password by typing it again in the field below.<br>***Note:*** *The user will be asked to enter a new signature password at the first log on.* |

| Step | Action |
|---|---|
| 7 | If desired, select the option to have UNICORN log off after a specified time of inactivity.<br>***Note:*** *UNICORN will log off after the selected time if no keyboard entries or scanner inputs are made, or if the mouse has not been moved. This will not disturb a method run in progress.* |
| 8 | Proceed to set folder and system access rights. This is described in *Folder and System Access* below. |

# Home folders

## General

Each user should be assigned to a home folder. This folder is a virtual storage for methods and results created by the user and not accessible for example by browsing the Windows folder structure. The home folder is valid only within the framework of the UNICORN database.

The home folder is always a ***Top Folder***. However, you may have any number of top folders that are for common use and not assigned as home folders for specific users.

Top folders can only be created or deleted in the ***User Setup*** dialog.

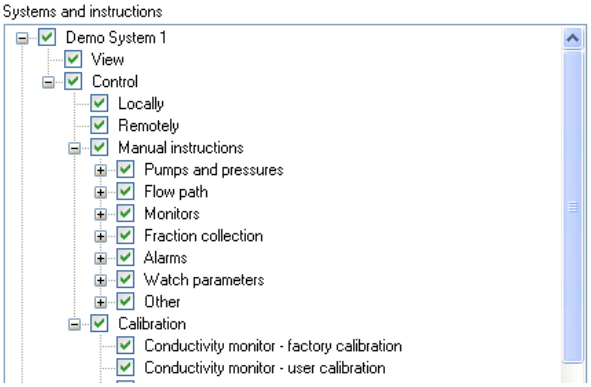
## Subfolders to the home folder

Each user may create any number of subfolders within the home folder (and any other top folder to which the user has access) to arrange methods and results in a preferred, logical folder structure. This can be done by the user in ***Navigator*** panes in all UNICORN modules except the ***Administration*** module.

## Folder and System Access

The table below describes how to assign user access to additional folders and to systems:

| Step | Action |
|---|---|
| 1 | • Select the ***Folder Access*** tab in the ***User Setup*** dialog.<br>*Result*: The ***Folders*** list is displayed, showing all available home folders.<br>• Click and select the checkbox for each folder that the user shall have access to.<br>***Note:*** *The user must have access to a folder to be able to copy, move, save or delete files in the folder. The user must also be assigned to an access group with read and write rights to shared folders to be able to perform these operations.* |
| 2 | • Select the ***System Access*** tab.<br>*Result*: The ***Systems and instructions*** list is displayed, showing all available systems and instructions.<br>• Select the checkbox for each system that the user shall have full access to, and proceed to apply the settings as described in *Save the new user entry* below.<br>or<br>• Click and select the checkboxes for systems that the user shall have limited access to and proceed with step 3. |

| Step | Action |
|---|---|
| 3 | Click the + symbol beside the checkbox for the system that you are assigning to the user.<br>*Result:* The access options are expanded:<br>  <br>• Select if the user should have ***View*** access to the system. (see *Network terms and general concepts, on page 10*)<br>and/or<br>• Select if the user should have ***Control*** access to the system.<br>If the user should have limited control rights, proceed with step 4 for each system. If not, proceed to apply the settings as described in *Save the new user entry* below. |
| 4 | Select the control options that the user will have to access each system:<br>• To control the system ***Locally***<br>(Control of the system from the local instrument server station)<br>• To control the system ***Remotely***<br>(Control of the system from any other client station in the network) |

| Step | Action |
|---|---|
| 5 | Select actions that the user will be allowed to perform for each system:<br>• ***Manual instructions***<br>Select the manual instructions the user may perform, concerning<br>- ***Pumps and pressure***<br>- ***Flow path***<br>- ***Monitors***<br>- ***Fraction collection***<br>- ***Alarms***<br>- ***Watch parameters***<br>and<br>- ***Other*** items.<br>**Tip:** Each manual instruction set contains a number of individual instructions that can be selected individually.<br>• ***Calibration***<br>Select the calibrations the user may perform, concerning<br>- ***Conductivity monitor***<br>***Note:*** *Factory and/or user calibration can be allowed for the conductivity monitor.*<br>- ***pH***<br>- ***Post column pressure***<br>- ***Pre column pressure***<br>- ***Sample pressure***<br>and<br>- ***System pressure***. |
| 6 | Proceed to apply the settings as described in *Save the new user entry* below. |

## Save the new user entry

After all user settings are completed, you can either

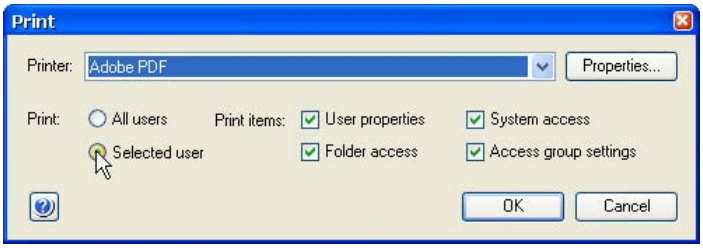
- Click the ***Apply*** button to save the entered settings and continue working in the ***User Setup*** dialog

  or

- Click the ***OK*** button to save the entered settings and close the dialog.

## Print user settings

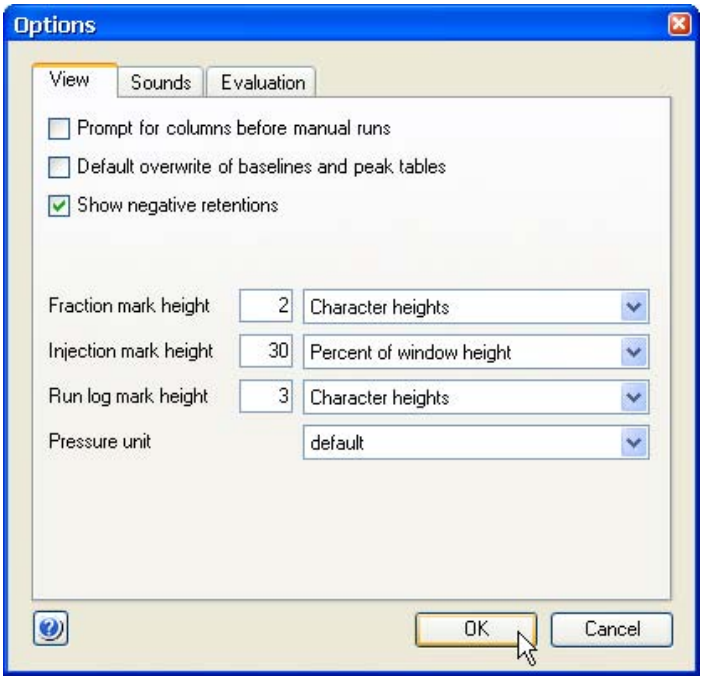
Click the ***Print*** button in the ***User Setup*** dialog to print a summary of the settings for a selected user or for all users. The items included in the summary can be selected in the Print dialog:



# 3.2.4 User options

## Introduction

In the ***Options*** dialog, each user may select preferred individual ***View***, ***Sound*** and ***Evaluation*** settings. The ***Options*** dialog is available under the ***Tools*** menu in all UNICORN modules. The changes will be applied at first when the user logs on the next time.



## View options

The table below describes the ***View*** tab settings:

| Command | Description |
|---|---|
| ***Prompt for columns before manual runs*** | If this option is selected, a prompt dialog will open before you start a manual run, requesting that you select the column type that will be used for the run. The maximum values for Pre column pressure and Delta column pressure will then be set automatically.<br>***Note:*** *If this option is selected, a manual run cannot be started unless the pressure limits have been set first.* |
| ***Default overwrite of baselines and peak tables*** | If this option is selected, new baselines and peak tables will overwrite and replace older baselines and peak tables.<br>***Note:*** *This only applies as default and the user may override this selection as needed.* |
| ***Show negative retentions*** | If this option is selected, negative retentions will be shown in chromatograms in the ***Evaluation*** module. This means that curve data before the injection point will be displayed, that is before time or volume is zero. Deselect this option to hide curve data before the injection point.<br>***Note:*** *The data is still recorded although it is not shown when the result is displayed. The selection only applies as default and the user may change this selection as needed.* |
| ***Fraction mark height*** | The value in this field will determine the height of the fraction marks in the chromatograms in the ***Evaluation*** module.<br>The height can be expressed as<br>• ***Character heights***<br>• ***Percent of window height***<br>(This options means that the mark height will be re-scaled when the window is resized)<br>• ***Pixels***<br>***Note:*** *The value in this field will not be re-calculated when you change how it is expressed. For example, if you change from **Character heights** to **Percent of window height**, the value must be increased substantially to avoid that the marks will be extremely small.* |

| Command | Description |
|---|---|
| ***Injection mark height*** | The value in this field will determine the height of the injection marks in the chromatograms in the ***Evaluation*** module. It is entered in the same manner as the ***Fraction mark height***. |
| ***Logbook mark height*** | The value in this field will determine the height of the logbook marks in the chromatograms in the ***Evaluation*** module. It is entered in the same manner as the ***Fraction mark height***. |
| ***Pressure Unit*** | The selection will determine the pressure unit that will be used in the results. The value can either be the default value determined by UNICORN or set to always be<br>• ***MPa***<br>• ***bar***<br>• ***psi*** |
| ***OK*** | Click the ***OK*** button to apply the changes and close the dialog. |
| ***Cancel*** | Click the ***Cancel*** button to close the dialog without any changes. |

## Sounds options

The table below describes the ***Sounds*** tab settings:

| Command | Description |
|---|---|
| ***System*** | Select the system you want to change sounds for from the droplist menu. |
| ***Play sound for*** | Choose a sound from the corresponding droplist menu, to be played for<br>• ***Alarms***<br>• ***Warnings***<br>• ***Errors***<br>• ***End of method***<br>***Note:*** *The default settings for each instrument is* ***Classic****, which is the sound scheme used for older versions of UNICORN.* |
| ***OK*** | Click the ***OK*** button to apply the changes and close the dialog. |
| ***Cancel*** | Click the ***Cancel*** button to close the dialog without any changes. |

***Note:*** *The workstation computer must be equipped with a soundcard and suitable speakers to play the system sounds.*

## Evaluation options

The table below describes the ***Evaluation*** tab settings:

| Command | Description |
|---|---|
| ***Asymmetry Ratio at*** | Set the peak height value (in percent of the total peak height) where the ***Asymmetry Ratio*** will be calculated. |
| ***Resolution Algorithm*** | There are three different algorithms available to determine the peak resolution. The algorithms are selected from the droplist menu. By default, algorithm three is selected.<br>***Note:*** *Refer to the UNICORN Evaluation Manual for information about the* ***Resolution Algorithms****.* |
| ***OK*** | Click the ***OK*** button to apply the changes and close the dialog. |
| ***Cancel*** | Click the ***Cancel*** button to close the dialog without any changes. |

# 3.2.5 User passwords and account access limitations

## Introduction

User password authentication for log on and electronic signatures is an important feature to ensure the security and integrity of the system. The general password policy is determined at the installation of the UNICORN server (or at a ***Full Installation*** of a stand-alone workstation).

This section describes

- how to change the password for a selected user
- how users change their own passwords
- how to lock accounts and limit user log on access to UNICORN
- how to set up administrator e-mail notifications for system messages.

The section also includes general rules and recommendations for UNICORN passwords.

**Tip:** Password settings can be changed after the installation by using a configuration tool. This tool is installed on the server computer and can be accessed from the Windows ***Start*** menu under ***All Programs:GE Healthcare:UNICORN:Configuration Tools:Change Installation Settings***.

---

## Rules and recommendations for UNICORN passwords

The list below summarizes rules and recommendations for UNICORN passwords:

- The system can be set up to operate without required passwords.
- The minimum number of password characters is set up at the installation.
- Passwords can be any combination of letters and numbers.
- Passwords are case sensitive.
- Avoid using obvious passwords.
- You cannot use the user name as password (except for the ***Default*** user).
- Expiration times for passwords are set in the ***User Properties***. However, passwords should be changed regularly by the users even if the user profile is set up without a password expiration time.

---

## Change passwords for a selected user

A user who has ***User Setup*** access (usually a system administrator) can change the passwords for any user.

The table below describes how to change the passwords for a selected user:

| Step | Action |
|---|---|
| 1 | • Choose ***Tools:User Setup*** or click the ***User Setup*** icon in the ***Administration*** module.<br>*Result*: The ***User Setup*** dialog is displayed. |
| 2 | • Select the user in the list.<br>*Result*: The ***User Properties*** tab is displayed for the selected user. |
| 3 | • Type the new log on password in the ***New log on password*** and ***Confirm log on password*** fields.<br>• If desired, repeat this for the signature password. |
| 4 | • Click the ***OK*** button.<br>*Result:* At the next log on, the user must enter this new password. |

***Note:*** *If the general password settings are changed, for example if the required minimum password length is increased, it is important to set up a mandatory password change at the next log on for all users.*

## How users change their own passwords

When passwords have expired, the user will be required to enter new passwords at log on. The user may also choose to change passwords at other times. The table below describes how users may do this. The procedure to change expired passwords at log on is similar.

| Step | Action |
|---|---|
| 1 | Choose ***Tools:Change Passwords*** in any UNICORN module.<br>*Result*: The ***Change Passwords*** dialog opens.<br> |
| 2 | • Type the old log on password in the ***Current*** field under the ***Log on password*** heading.<br>***Note:*** *The passwords will only be shown as asterisks.*<br>• Type a new password in the ***New*** field.<br>• Repeat the new password exactly in the ***Confirm new*** field. |
| 3 | To define a electronic signature password, repeat step 2 under the ***Signature password*** heading.<br>***Note:*** *The signature password cannot be the same as the log on password.* |
| 4 | Click ***OK***. |

## Locking user accounts

A user account may be locked for log on either by UNICORN based on a set expiration time, or manually by the system administrator. The user with a locked account will not have access to UNICORN until another user unlocks the account. This user must be assigned to an ***Access Group*** with ***User Setup*** access.

***Note:*** *It is recommended that **User Setup** access is limited to administrators and similar user groups only, to avoid unauthorized user property changes, including the unlocking of locked accounts.*

The table below describes how to lock a user account from access.

| If... | Then... |
|---|---|
| you want to lock the user account manually | select the ***User account locked*** checkbox in the ***User Properties*** for the user in question.<br>*Result:* At the next log on the user will be unable to access UNICORN. |
| you want to lock the account after a set time | • select the checkbox for ***Lock account on***<br>• click the down arrow by the date field and choose a date in the pop-up calender.<br>*Result:* The account will automatically be locked at the chosen date. |

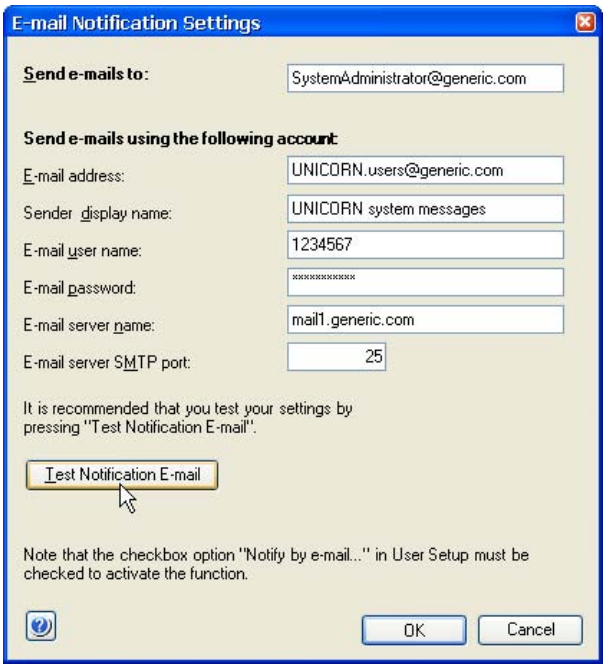
**Tip:** You may select an option to have UNICORN generate an e-mail to a specified administrator mail adress whenever a user account is locked. This option is available only if a receiving mail adress has been set up. The e-mail notification settings are described below.

## E-mail notification setup

The table below describes how to set up an administrator e-mail account for automated system messages when a user account is locked.

| Step | Action |
|---|---|
| 1 | Choose ***Tools:User Setup*** or click the ***User Setup*** icon in the ***Administration*** module.<br>*Result*: The ***User Setup*** dialog opens. |

| Step | Action |
|---|---|
| 2 | Click the ***E-mail Notification Settings*** button.<br>*Result:* The ***E-mail Notification Settings*** dialog opens. |




| | |
|---|---|
| 3 | Enter the e-mail adress for the mailbox that is monitored by the responsible system administrator in the ***Send e-mails to*** field. |
| 4 | Enter the account settings for the e-mail account that will be used to send the generated system messages.<br>**Tip:** Since the same account will be used for all system messages regardless of the individual user, the most convenient solution may be to set up a common, specific account for this purpose. |
| 5 | Click the ***Test Notification E-mail*** button to test the settings.<br>*Result:* A test message will be generated and sent. An error message will be displayed if the settings are incorrect. |

**Tip:** The checkbox for the option ***Notify by e-mail when a user account is locked*** will now be available for selection. Remember to select the checkbox to activate the notification.

# 3.2.6 Delete users and folders

## Introduction

This section describes

- how to delete user accounts
- how to delete special folders:
  - home folders with assigned users
  - top folders with shared access.

## Delete a user

The table below describes how to delete a user:

| Step | Action |
|---|---|
| 1 | Choose ***Tools:User Setup*** or click the ***User Setup*** icon in the ***Administration*** module.<br>*Result*: The ***User Setup*** dialog is displayed. |
| 2 | • Select the user from the ***Users*** list and click the ***Delete*** button.<br>*Result*: A confirmation dialog is displayed, asking you to verify that the user has no active runs, or no runs placed in a system queue, before the user account is deleted.<br>• Click ***OK*** in the confirmation dialog, to confirm that the user can be deleted.<br>***Note:*** *You can delete all users except the last user with* ***User Setup*** *access. This ensures that at least one user has the right to perform administration functions.* |
| 3 | Click the ***OK*** button to close the ***User Setup*** dialog. |

***Note:*** *When you delete a user, the user's home folder or method and result files are not deleted.*

## Delete special folders

Any user with ***User Setup*** access can delete top folders. However, a home folder cannot be deleted if it is assigned to an active user. The conditions for deleting top folders are described below:

### A common top folder which is not an assigned home folder.

To delete a top folder that is not a home folder

- ensure that the folder does not contain any object (deleting a folder with content is not allowed)
- select the folder in the ***Folder Access*** tab of the ***User Setup*** dialog

  and
- click the ***Delete*** button.

***Note:*** *The **Delete** button will not be available if the folder is assigned as home folder for an active user. You cannot delete an assigned home folder by mistake.*

### A home folder to which a user is assigned

To delete a home folder to which a user is assigned

- re-assign another home folder to the user (see *Section 3.2.3 Create a new user, on page 167*)

  or
- delete the user first if this is the reason why the home folder should be deleted. (See instructions above)

You can then proceed to delete this folder as any other top folder.

# 3.3 License server administration

## Introduction

Access to UNICORN 6.1 is regulated by the number of valid e-licenses. The e-licenses are floating, which means that the number of computer stations with UNICORN 6.1 installed may exceed the number of e-licenses, but the number of logged on stations cannot.

The e-licenses are handled by the Software Licensing Server, which is installed on the database server (i.e. the same computer as the database). The licensing server is included in a stand-alone workstation installation. Normally, the license authentication will operate without any user interaction. However, in some cases it may be necessary to use the License Server Admin tool as described below.

***Note:*** *The Software Licensing Server is common for several e-licensed products from GE Healthcare. If other e-licensed products (for example DeCyder) are already installed, the UNICORN 6.1 licenses will be added to the previous installation*

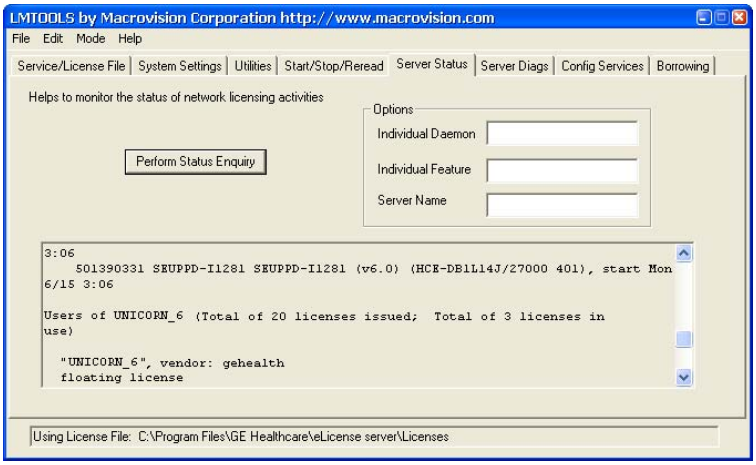
---

## Verify the number of active and available e-licenses

The table below describes how to use the License Server Admin tool to identify the number of available licenses and determine how many that are in use.

| Step | Action |
|---|---|
| 1 | Open the ***License Server Admin*** tool from the Windows Start:Programs menu.<br>Normally, it is located under GE Healthcare:GE Healthcare Software Licensing Server. |
| 2 | Click the ***Server Status*** tab. |

| Step | Action |
|---|---|
| 3 | Click the ***Perform Status Enquiry*** button.<br>*Result:* A status report similar to the illustration below is displayed: |

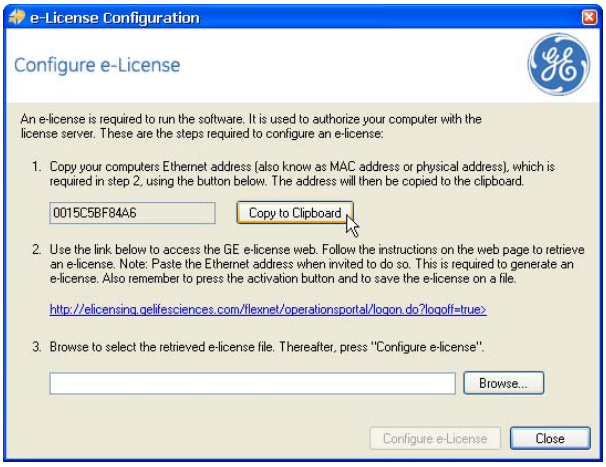



| | |
|---|---|
| 4 | Read the total number of issued licenses and the number currently in use (in this case 20 licenses issued and 3 in use). |

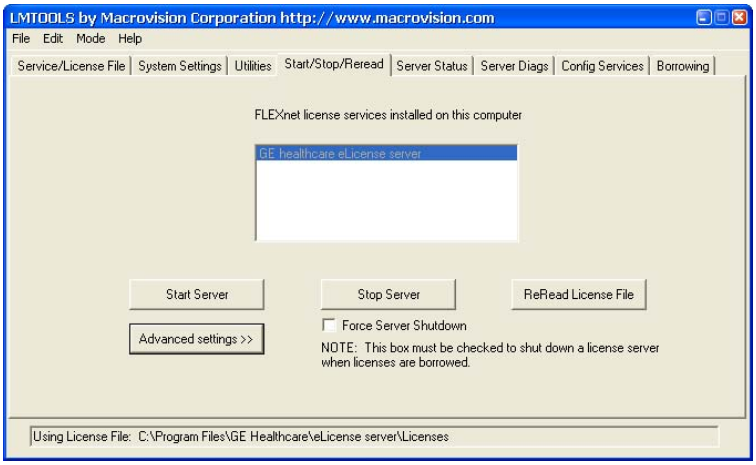
***Note:*** *If several license servers are in use, you can enter the server name to view only the licenses for a specific server. If you want to view the information for a specific application only, you can enter that in the* ***Individual Feature*** *field.*

## Add more e-licenses to the license server

The table below describes how to add more licenses to the license server.

| Step | Action |
|---|---|
| 1 | Choose the ***Configure e-License*** menu option from the Windows Start:Programs menu, under GE Healthcare:UNICORN:Configuration Tools.<br>*Result:* The ***e-License Configuration*** dialog opens:<br>  |
| 2 | Proceed to retrieve the added e-licenses as described in *Section 2.3.2 Configure an e-license, on page 45*.<br>***Note:*** *It is important that the Ethernet address of the license server computer is used, when the additional e-licenses are retrieved.* |
| 3 | Once the retrieval procedure is finished, open the ***License Server Admin*** tool. |

| Step | Action |
|---|---|
| 4 | Click the ***Start/Stop/Reread*** tab. |




| | |
|---|---|
| 5 | Click the ***Stop Server*** button. |
| 6 | Click the ***Start Server*** button.<br>*Result:* The added licenses are registered and available for use. |

**Tip:** If it is impossible to obtain a license even though there should be licenses available, it may help if the license server is re-started as described above. If licenses are locked in error, restarting will enable the server to register the licenses as available again.

## Troubleshoot licensing problems

The table below describes how to use the Admin tool for a diagnosis when a license cannot be obtained.

| Step | Action |
|---|---|
| 1 | Click the ***Server Diags*** tab. |
| 2 | Enter the feature name, i.e. ***UNICORN_Main***, in the ***Feature Name*** field. |
| 3 | Click the ***Perform Diagnostics*** button.<br>*Result:* A list of the license files is displayed, showing the status and if the license(s) can be checked out. |

## View license server debug logs

In case of problems when obtaining licenses, a debug log can be viewed by clicking the ***View Log*** button in the ***Config Services*** tab. This information can provide useful input to the GE Healthcare support staff.

# 4 Database administration

## Introduction

This chapter describes the standard database solution used for data storage and the maintenance procedures required to operate the database.

The chapter also contains a general instruction on how to upgrade the database server software to editions with greater data handling capacity.

## Contents

This chapter contains these sections.


| Section | See page |
|---|---|
| 4.1 Database overview | 193 |
| 4.2 Database maintenance | 194 |
| 4.3 SQL Server edition upgrade | 213 |

# 4.1 Database overview

## About the UNICORN 6.1 database

Data storage in UNICORN 6.1 is handled by a database. The database is as such a relational database and SQL (Structured Query Language) is the querying language used for the retrieval, insertion, updating, deleting and general managing of the data.

The standard UNICORN 6.1 database server installation, both for a dedicated server in a network environment and a stand-alone workstation, includes the distributable version of Microsoft SQL Server Express. It is described in *SQL Server Express facts* below.

The installation and basic set up of the database is an integrated part of the installation sequence for the options including the database server functions. It will not require any user settings other than the initial selection of the option and selection of destination folders for backup and archives.

Normally, the database maintenance functions offered by UNICORN will be sufficient for the UNICORN administrator. Using management tools such as SQL Server Management Studio should not be necessary and it is not recommended since improper changes may corrupt the database.

## SQL Server Express facts

The list below includes some facts about Microsoft SQL Server Express:

- Primarily suited for smaller-scale applications
- Up to 1 GB of server RAM can be utilized
- Utilizes one single physical CPU
- Operates databases up to 4 GB, excluding log files

# 4.2 Database maintenance

## Introduction

Once the database is installed and systems are running and producing data, it is essential that routines and schedules for the back up and archiving of data are established. This section describes how to perform these routines, and also how to import data from earlier UNICORN versions.

## Contents

This section contains these topics.


| Section | See page |
|---|---|
| 4.2.1 Database backup | 195 |
| 4.2.2 Restore backup data | 199 |
| 4.2.3 Archive data | 202 |
| 4.2.4 Retrieve archived data | 206 |
| 4.2.5 Release locked database objects | 209 |
| 4.2.6 Import data from UNICORN 5.x and older versions | 211 |

# 4.2.1 Database backup

## Introduction

At the database server installation a target folder for the regular, scheduled backup was set up. By default, backups were also scheduled at the installation. The default backup settings are

- daily backup
- at 03:00 local time
- in the selected target folder
- with the last 14 recent backup files kept.

  (when additional files are saved, the oldest backup is deleted)

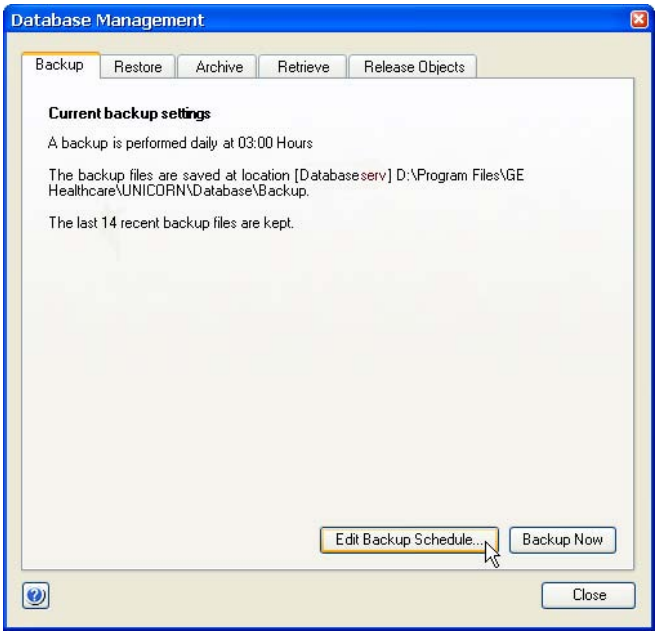
This section describes how to verify or edit the current backup schedule settings. It also describes how to perform manual backups between the scheduled backups.

***Note:*** *It is recommended that the scheduled backups are stored on another physical drive than where the active database is stored. If this is not possible, it is recommended that the backup files are copied to another physical drive or storage media at regular intervals.*

## Verify or edit the database backup schedule

The table below describes how to schedule the database backup:

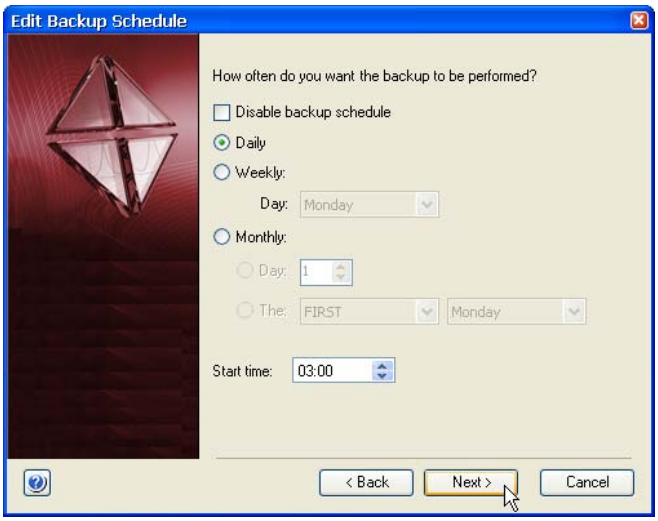
| Step | Action |
|---|---|
| 1 | Click the ***Database Management*** icon in the ***Administration*** module.<br>*Result:* The ***Database Management*** dialog opens. |




**Tip:** The ***Backup*** tab shows the current schedule. If the settings are suitable you can click the ***Close*** button at this point.

| | |
|---|---|
| 2 | Click the ***Edit Backup Schedule*** button.<br>*Result:* The ***Edit Backup Schedule Wizard*** opens. |

| Step | Action |
|---|---|
| 3 | Click the ***Next*** button to open the next wizard dialog: |




| | |
|---|---|
| 4 | Select the frequency and the start time for the scheduled backups.<br>***Note:*** *You can also select to disable the scheduled backups at this point. For example, this is a necessary step before changing the SQL Server installation. After a new SQL Server edition is installed, the scheduled backups can be restored.*<br>Click the ***Next*** button to proceed. |
| 5 | Choose the number of backup files to keep.<br>***Note:*** *You may choose to keep all files. However, depending on the number of users and results that are created, this may cause uncontrolled disk space problems.*<br>Click the ***Next*** button to proceed. |
| 6 | The final wizard page shows a summary of the selected settings. Click the ***Finish*** button to accept and apply the schedule.<br>***Note:*** *The backup files will be named* ***`UNICORN_SCHEDULED_BACKUP_<Date>_<Time>.BAK`*** *by default.* |

***Note:*** *It is recommended that another physical drive than where the active database is stored is selected for the scheduled backups at the installation of the UNICORN software. If this is not possible, it is recommended that the backup files are copied to another physical drive or storage media at regular intervals.*

***Note:*** *Ensure that the database server computer is turned on at the time when the scheduled backup will occur. If it is not turned on and operational, the backup will fail, it will not be postponed. This is specially important for stand-alone workstations, which are more likely to be turned off when not in use.*

## Manual backups

If necessary, you can make extra backups manually between the scheduled backups. This is described in the table below.

| Step | Action |
|---|---|
| 1 | Click the ***Database Management*** icon in the ***Administration*** module.<br>*Result:* The ***Database Management*** dialog opens. |
| 2 | Click the ***Backup Now*** button in the ***Backup*** tab.<br>*Result:* A ***Backup Now*** confirmation dialog opens. |
| 3 | Click the ***OK*** button to start the backup.<br>• This process may take several minutes. A progress dialog will be displayed while the backup is performed.<br>*Result:* A ***Backup*** confirmation dialog opens when the backup is completed. The backup file will be named `UNICORN_MANUAL_BACK-UP_<Date>_<Time>.BAK` by default. |
| 4 | Verify that the backup has been performed in the default folder and then either<br>• click the ***Close*** button<br>or<br>• click ***Go To Backup File*** to open the backup folder and access the files. |

**Tip:** It is recommended that you either copy or move the backup files to an external storage device to minimize the risk for loss of data. The backup will include the UNICORN database content as well as a log report about the backup action.

# 4.2.2 Restore backup data

## Introduction

If necessary you may restore data from a previous backup, for example if data has been deleted by mistake. The restored data will replace all the current data in the database with the data generated up to the point of time when the backup was made. All changes performed after the time of the backup will be lost.

You can use this procedure to move data from one database instance to another but all data in the database instance where the backup is restored will be overwritten.

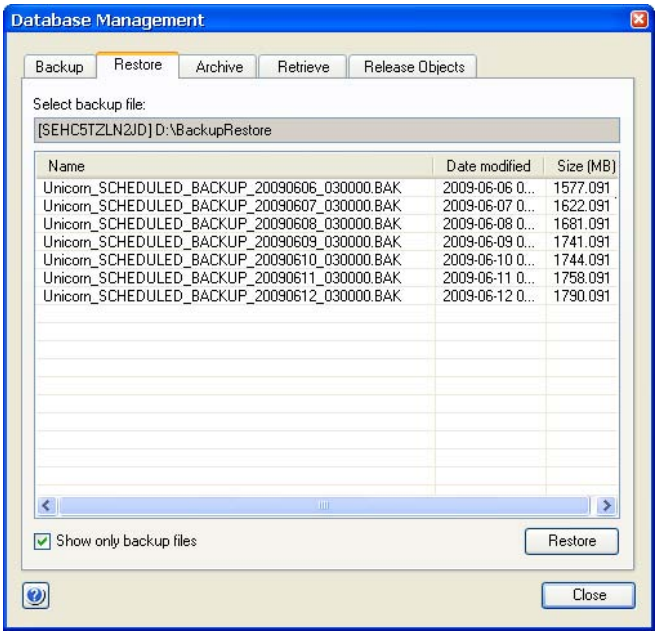
***Note:*** *A database backup from UNICORN 6.0 cannot be restored and used in UNICORN 6.1. To do this, you must first install UNICORN 6.0, restore the version 6.0 database backup, and then perform an upgrade of the database server to UNICORN 6.1. The restored version 6.0 database will then automatically be upgraded to UNICORN 6.1 at the same time.*

## Restore backup data

The table below describes how to perform the restoration.

| Step | Action |
|---|---|
| 1 | Click the ***Database Management*** icon in the ***Administration*** module.<br>*Result:* The ***Database Management*** dialog opens. |

| Step | Action |
|---|---|
| 2 | Click the ***Restore*** tab. All the available backup files are shown in the displayed list. |




***Note:*** *You can select to show only backup files in the list. If this option is de-selected, you will also see the backup log files.*

| | |
|---|---|
| 3 | Select the backup file to restore and click the ***Restore*** button.<br>*Result:* A warning dialog opens. This dialog suggests that you backup the database before restoring the previous backup. This will ensure that all essential data is saved before it is replaced with the data from the backup. |

| Step | Action |
|---|---|
| 4 | Either<br>• click the ***Yes*** button to backup before restoring<br>or<br>• click the ***No*** button to proceed without making a new backup.<br>*Result:* A second warning dialog opens. This dialog shows the backup file that will be restored and explains the implications for the current data. All other UNICORN modules will be closed and no other actions may be performed during the restoration.<br>***Note:*** *All other client computers connected to this database instance must be logged off from UNICORN during the restoration.* |
| 5 | Click ***OK*** to proceed.<br>*Result:* A progress dialog is displayed while the restoration is performed. The process is completed when the dialog closes. |

***Note:*** *The **Restore** operation will reset the **Default** user in the **Administrator** user group, with the password "default". To ensure access security, the **Default** user should be deleted again, after each backup resoration.*

# 4.2.3 Archive data

## Introduction

When your database size reaches a level where performance is affected and the remaining space is not enough for the immediate storage needs, you can archive selected parts of the result data. This can either be the entire result contents from before a specified date, or selected results. You can also archive logs. It is normally a good idea to archive data that is not immediately needed at regular intervals.

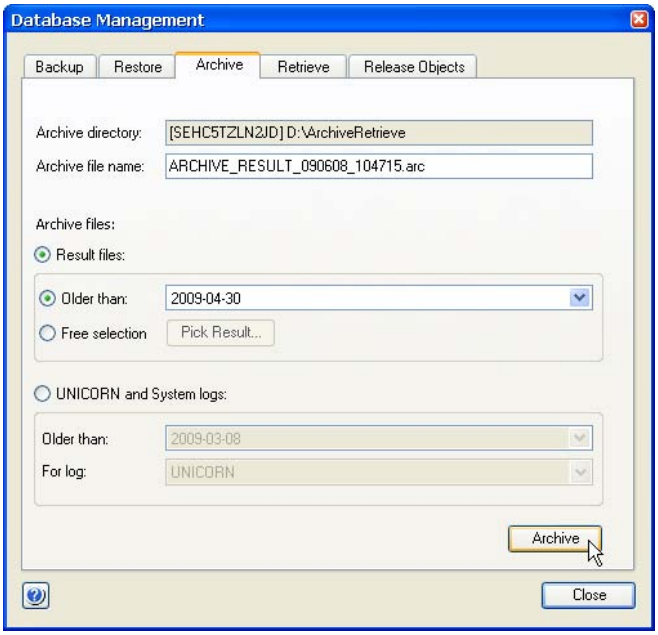
Archiving will reduce the size of the database. It is not the same as exporting result data, which will create copies of the results and not reduce the size of the database at all.

## Archive data

The table below describes how to archive complete result data or logs:

| Step | Action |
|---|---|
| 1 | Click the ***Database Management*** icon in the ***Administration*** module.<br>*Result:* The ***Database Management*** dialog opens. |

| Step | Action |
|---|---|
| 2 | Click the ***Archive*** tab. |




The archive directory and a suggested archive file name are shown in the dialog. The directory was selected at the installation and cannot be edited here. The file name can be changed. The default name suggested by UNICORN will include the date of the archiving, and reflect if the selected content will be results or logs.

3 Choose the data to be archived:

- If you select ***Result files***
  - then choose a latest date from the droplist calender

    or
  - select ***Free selection*** and click the ***Pick Result*** button.

    (this option is described in *Archive selected results* below)

If you select ***UNICORN and System logs***

- then choose a latest date from the droplist calender

  and
- select the log to archive - UNICORN or a system log - from the ***For log*** list.

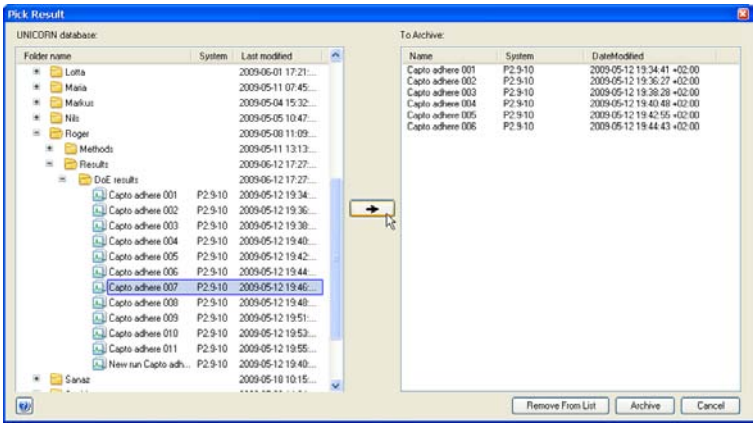
| Step | Action |
|---|---|
| 4 | Click the ***Archive*** button.<br>*Result:* A warning dialog opens. This dialog suggest that you backup the database before archiving the selected data.<br>***Note:*** *It is recommended to always perform a backup before archiving.* |
| 5 | Either<br>• click the ***Yes*** button to backup before restoring<br>or<br>• click the ***No*** button to proceed without making a new backup.<br>*Result:* A progress dialog opens while the data is archived. Depending on the selections above, this may take several minutes. When the archiving is completed, a confirmation dialog opens. |
| 6 | Click the ***Close*** button to close the confirmation dialog. |

***Note:*** *It is recommended to save the archived data on another storage media than where the active database is stored.*

## Archive selected results

The table below describes how to select individual results for archiving:

| Step | Action |
|---|---|
| 1 | In the ***Database Management*** dialog: ***Archive*** tab<br>• Select ***Result files***<br>• Select ***Free selection***<br>and<br>• click the ***Pick Result*** button.<br>*Result:* The ***Pick Result*** dialog opens. |

| Step | Action |
|---|---|
| 2 | In the ***Pick Result*** dialog:<br>• Locate and select the result you want archive<br>and<br>• click the arrow button to add it to the ***To Archive*** list.<br>  |
| 3 | Repeat step 2 until you have added all results you wish to archive to the list.<br>• You can remove results from the list by selecting them and clicking the ***Remove From List*** button. |
| 4 | Click the ***Archive*** button.<br>*Result:* A warning dialog opens. This dialog suggest that you backup the database before archiving the selected data. |
| 5 | Either<br>• click the ***Yes*** button to backup before restoring<br>or<br>• click the ***No*** button to proceed without making a new backup.<br>*Result:* A progress dialog opens while the data is archived. Depending on the selections above, this may take several minutes. When the archiving is completed, a confirmation dialog opens. |
| 6 | Click the ***Close*** button to close the confirmation dialog. |

# 4.2.4 Retrieve archived data

## Introduction

Results and logs that have been archived can be retrieved from the archive and included in the active database again. Individual results are selected from the archive directory, not the entire archive. However when logs are retrieved, the entire log is restored.

***Note:*** *You can only retrieve archived results and logs into the same database that they were originally archived from. You cannot use this procedure to migrate data from one database to another.*

**Tip:** Archived results can be shown in the ***Evaluation*** module ***Result Navigator*** if you select the option show ***All***. This can help you to locate the archived results that you wish to retrieve. Archived results are represented by a special icon:

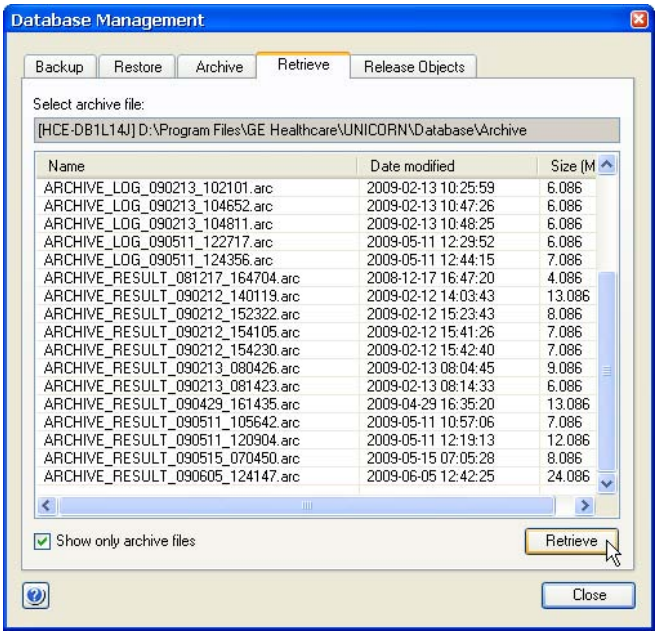
Right-click the archived result and choose the ***Properties*** menu command. Select the ***Result*** tab. The ***File Name*** shown here is the name of the archive directory where you can find the archived result.

## Retrieve archived results or logs

The table below describes how to retrieve archived data:

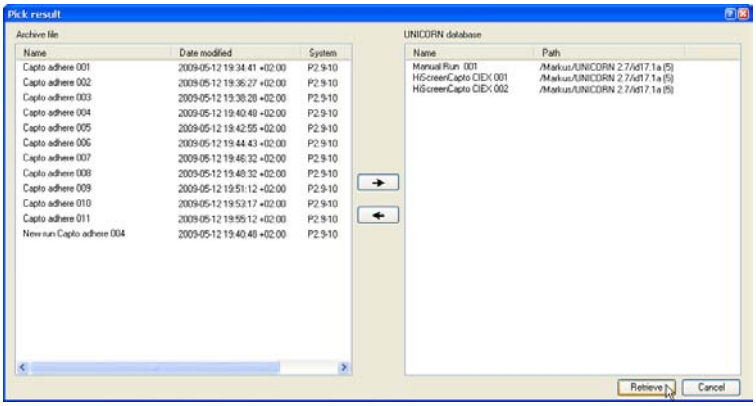
| Step | Action |
|---|---|
| 1 | Click the ***Database Management*** icon in the ***Administration*** module.<br>*Result:* The ***Database Management*** dialog opens. |

| Step | Action |
|---|---|
| 2 | Click the ***Retrieve*** tab. |




***Note:*** *You can retrieve either archived results or logs. All archived files will have the ending* `.arc`*. If the option* ***Show only archived files*** *is selected you will only see these files. If you de-select the option you will also see additional files ending with* `.log`*. These log files record the archiving operations and are not connected to the actual UNICORN results or logs.*

| Step | Action |
|---|---|
| 3 | Select the archive file you want to retrieve and click the ***Retrieve*** button.<br>If you selected to retrieve a log:<br>• The log is restored to the active database and a confirmation dialog is shown.<br>(This completes the retrieving process)<br>If you selected to retrieve archived results:<br>• The ***Pick Result*** dialog opens.<br>(You will then proceed with the steps below) |




| | |
|---|---|
| 4 | Select an archived result in the ***Archive file*** list and click the right arrow button.<br>*Result:* The result is moved to the ***UNICORN database*** list. The destination folder search path is shown in the list. You can remove selected results from the ***UNICORN database*** list by clicking the left arrow button. |
| 5 | Click the ***Retrieve*** button in the ***Pick Result*** dialog.<br>*Result:* The results are restored to the active database and a confirmation dialog is shown. |

***Note:*** *The retrieved results will be restored to the folder where they were originally archived from. All archived material will however still be saved in the archive.*

# 4.2.5 Release locked database objects

## Introduction

Whenever a database object is opened in UNICORN, it will automatically be locked by the user and write protected from all other users. This applies to all objects such as methods, results, Design of Experiments etc. The automatic locking will ensure that conflicting editing cannot be performed and saved simultaneously by several users.

However, if objects are not closed and UNICORN is logged off in an improper manner, the locking may not be released. This may happen if UNICORN shuts down due to an error. In such cases you may have to release the locked objects manually. This is described below.

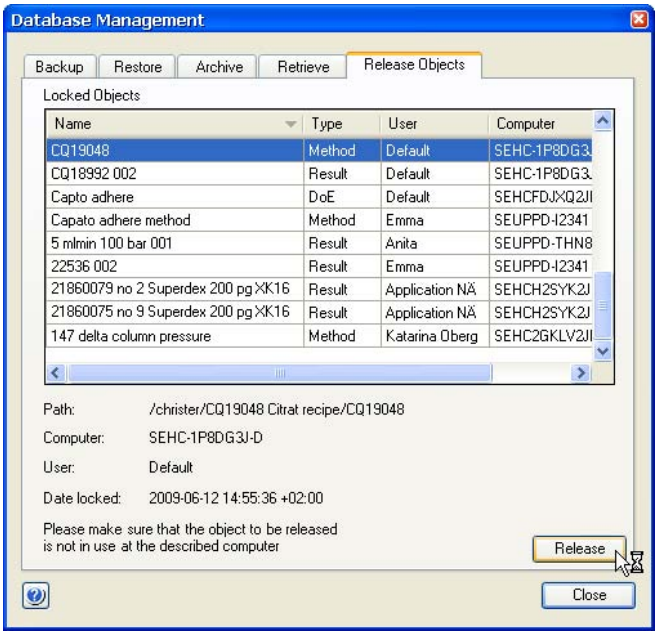
***Note:*** *Make sure that the released object is not in use at the computer listed in the dialog. Releasing an object that is actually in use may cause unexpected results.*

## Release locked objects

The table below describes how to release locked database objects:

| Step | Action |
|---|---|
| 1 | Click the ***Database Management*** icon in the ***Administration*** module.<br>*Result:* The ***Database Management*** dialog opens. |

| Step | Action |
|---|---|
| 2 | Click the ***Release Objects*** tab. |




| | |
|---|---|
| 3 | Select the object you want to release and click the ***Release*** button.<br>*Result:* The ***Release Objects*** warning dialog opens, asking if you have verified that the object is no longer in use by the listed user at the listed computer. |
| 4 | Click the ***Yes*** button to confirm.<br>*Result:*The lock is released and a confirmation dialog opens. |
| 5 | Click the ***OK*** button to close the dialog. |

# 4.2.6 Import data from UNICORN 5.x and older versions

## Result migration from earlier UNICORN

In versions of UNICORN older than 6.0, data was stored in a file structure and not in a database. Due to the differences in format, results from these earlier versions cannot be used directly in UNICORN 6.1. Old results must be imported and converted into the database format.

In order for the import to work the results must be valid for UNICORN 5. That is, the result must have been created in UNICORN 5 (any sub-version) and be openable without errors. Results from ÄKTAexplorer and ÄKTApurifier can be imported. Other systems are not supported.

It may be possible to import results from earlier versions if they are opened and saved in UNICORN 5 before the import. However, it is likely that more data is excluded than if the result was originally generated in UNICORN 5.

The purpose for the import is to enable comparison of results generated in UNICORN 5 and in UNICORN 6.1. It will not accomplish a complete data migration, fulfilling all regulatory demands. Before any comparison, it is important to review each result after the import, to verify that all essential data is included.

## Import UNICORN 5 results

The table below describes how to import result data from UNICORN 5, in the ***Evaluation*** module:

| Step | Action |
|---|---|
| 1 | Select the destination folder where you want the imported results to be shown in the ***Result Navigator Results*** tab. |
| 2 | Choose the ***File:Import:Entire Result*** menu command.<br>*Result:* The ***Import*** dialog opens. |
| 3 | Choose ***UNICORN 5.* Result Files(*.res)*** as format in the ***Files of type*** field. |
| 4 | Locate and select the result files in the navigation field<br>**Tip:** You can select several results at once by using the shift or **Ctrl** keys when selecting. |

| Step | Action |
|---|---|
| 5 | Click the ***Open*** button<br>*Result:* The selected results are imported into the database and shown in the ***Result Navigator*** in the selected destination folder. |

# 4.3 SQL Server edition upgrade

## Introduction

The SQL Server Express edition provided with the UNICORN 6.1 installation is suitable for small workgroups operating only two to three instrument servers sharing the same database. For organizations where larger groups of users need access to a common database it is recommended that the SQL Server edition is upgraded. This section describes how to perform an upgrade.

## Prerequisites

The setup must be run by a user that is logged on as administrator. If the installation is performed from a remote share, you must use a domain account with read and execute permissions on the remote share.

Ensure that no other user is logged on to the database before the upgrade is performed.

## Disable scheduled backups before upgrading

Before upgrading you must disable the scheduled backups in your present database installation. The table below describes how to do this:

| Step | Action |
|---|---|
| 1 | Click the ***Database Management*** icon in the ***Administration*** module.<br>*Result:* The ***Database Management*** dialog opens. |
| 2 | Click the ***Edit Backup Schedule*** button.<br>*Result:* The ***Edit Backup Schedule Wizard*** opens. |
| 3 | Click the ***Next*** button to open the next wizard dialog. |
| 4 | Click and select the ***Disable backup schedule*** checkbox. |
| 5 | Click the ***Next*** button to proceed.<br>*Result:* The next wizard dialog shows a confirmation message that you have disabled the backup schedule. |
| 6 | Click the ***Finish*** button to apply the settings. |
| 7 | Click the ***Close*** button to close the ***Database Management*** dialog. |

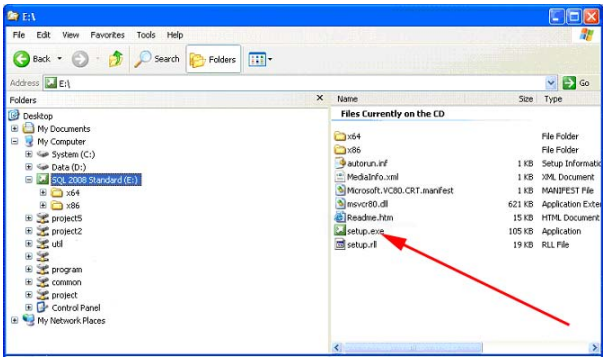
| Step | Action |
|---|---|
| 8 | Exit UNICORN before proceeding with the upgrade. |

## Upgrade the SQL Server edition

The table below describes how to perform the upgrade.

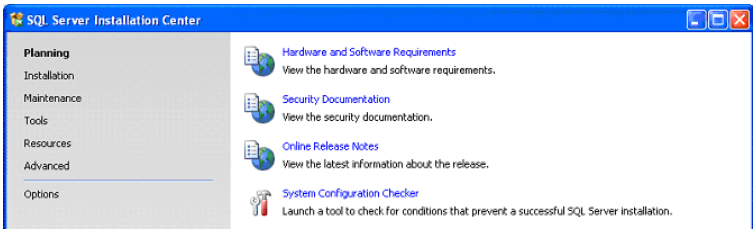
***Note:*** *Some of the images in the instruction have been cropped and do not show the available buttons on the bottom part of the dialog (**OK**, **Next**, **Back**, **Cancel**, **Help** etc.).*

| Step | Action |
|---|---|
| 1 | Browse to the root folder where the installation files are and double-click the file `setup.exe` |

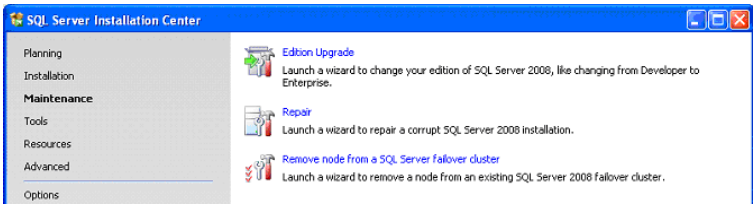



*Result*: The ***SQL Server Installation Center*** dialog opens.

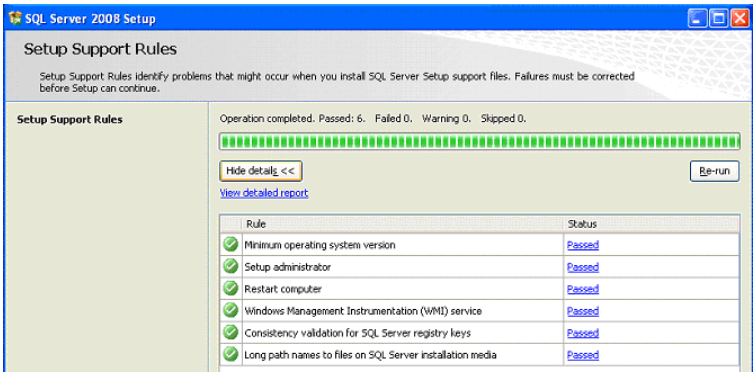
| | |
|---|---|
| 2 | Click the heading ***Maintenance*** in the left menu field. |



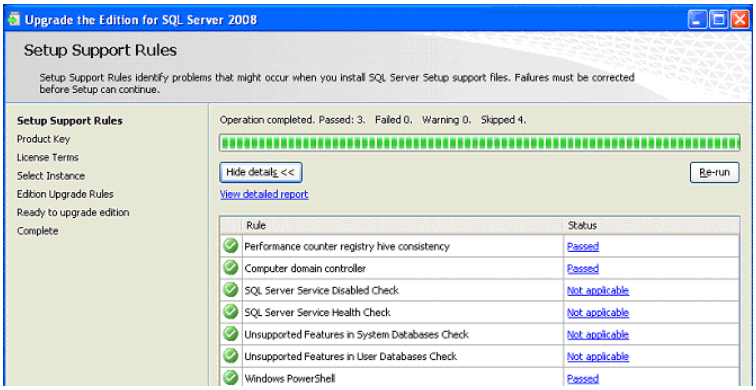
| Step | Action |
|---|---|
| 3 | Choose the ***Edition Upgrade*** maintenance option. |


SQL Server Installation Center
Planning
Installation
Maintenance
Tools
Resources
Advanced
Options
Edition Upgrade
Launch a wizard to change your edition of SQL Server 2008, like changing from Developer to Enterprise.
Repair
Launch a wizard to repair a corrupt SQL Server 2008 installation.
Remove node from a SQL Server failover cluster
Launch a wizard to remove a node from an existing SQL Server 2008 failover cluster.

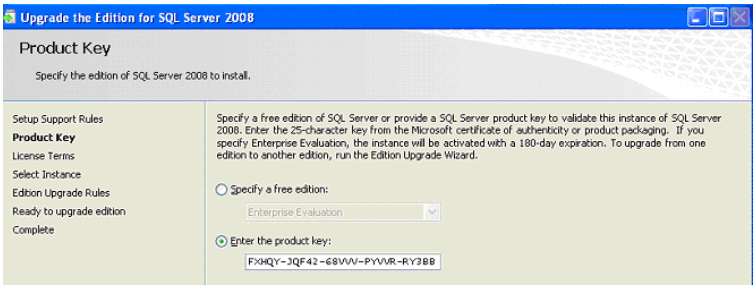
| | |
|---|---|
| 4 | A ***Setup Support Rules*** dialog will open and run a discovery operation to identify possible problems with the support file installation.<br>• Click the ***OK*** button to proceed after this operation step is completed. |


SQL Server 2008 Setup
Setup Support Rules
Setup Support Rules identify problems that might occur when you install SQL Server Setup support files. Failures must be corrected before Setup can continue.
Setup Support Rules
Operation completed. Passed: 6. Failed 0. Warning 0. Skipped 0.
Hide details <<
Re-run
View detailed report
Rule
Status
Minimum operating system version
Passed
Setup administrator
Passed
Restart computer
Passed
Windows Management Instrumentation (WMI) service
Passed
Consistency validation for SQL Server registry keys
Passed
Long path names to files on SQL Server installation media
Passed

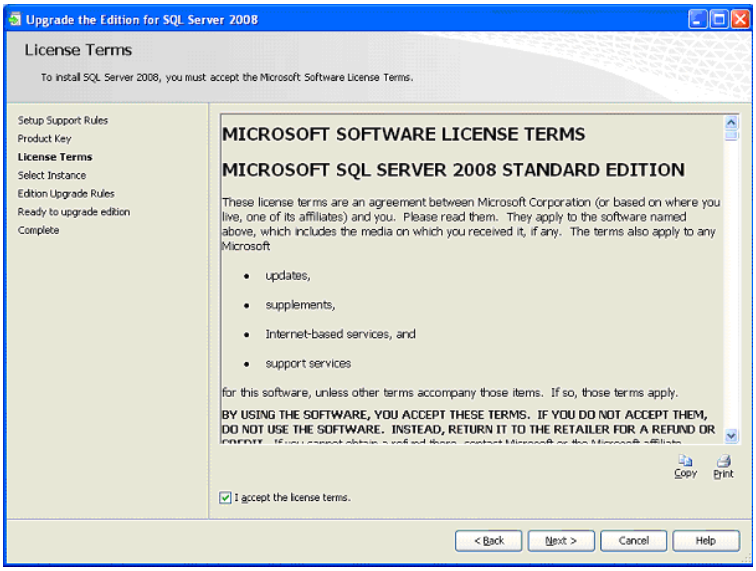
| Step | Action |
|---|---|
| 5 | The discovery operation continues in a second dialog.<br>• Click the ***Next*** button to proceed after this operation step is completed. |



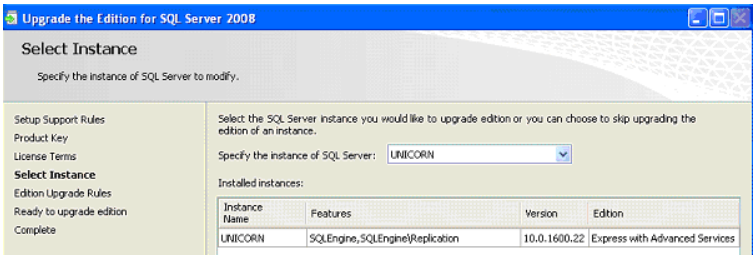

| | |
|---|---|
| 6 | The ***Product Key*** dialog opens.<br>• Select ***Enter the product key***<br>and<br>• enter the 25-character product key.<br>Click the ***Next*** button to proceed. |


Upgrade the Edition for SQL Server 2008
Product Key
Specify the edition of SQL Server 2008 to install.
Setup Support Rules
Product Key
License Terms
Select Instance
Edition Upgrade Rules
Ready to upgrade edition
Complete
Specify a free edition of SQL Server or provide a SQL Server product key to validate this instance of SQL Server 2008. Enter the 25-character key from the Microsoft certificate of authenticity or product packaging. If you specify Enterprise Evaluation, the instance will be activated with a 180-day expiration. To upgrade from one edition to another edition, run the Edition Upgrade Wizard.
Specify a free edition:
Enterprise Evaluation
Enter the product key:
FXHQY-JQF42-68VVV-PYVVR-RY3BB

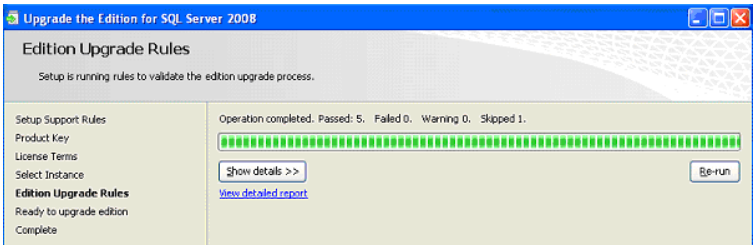
| Step | Action |
|---|---|
| 4 | The ***License Terms*** dialog opens.<br>• Read the license agreement<br>• Select the checkbox to accept the terms<br>• Click the ***Next*** button to proceed. |


Upgrade the Edition for SQL Server 2008
License Terms
To install SQL Server 2008, you must accept the Microsoft Software License Terms.
Setup Support Rules
Product Key
License Terms
Select Instance
Edition Upgrade Rules
Ready to upgrade edition
Complete
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT SQL SERVER 2008 STANDARD EDITION
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft
updates,
supplements,
Internet-based services, and
support services
for this software, unless other terms accompany those items. If so, those terms apply.
BY USING THE SOFTWARE, YOU ACCEPT THESE TERMS. IF YOU DO NOT ACCEPT THEM, DO NOT USE THE SOFTWARE. INSTEAD, RETURN IT TO THE RETAILER FOR A REFUND OR
Copy
Print
I accept the license terms.
< Back
Next >
Cancel
Help

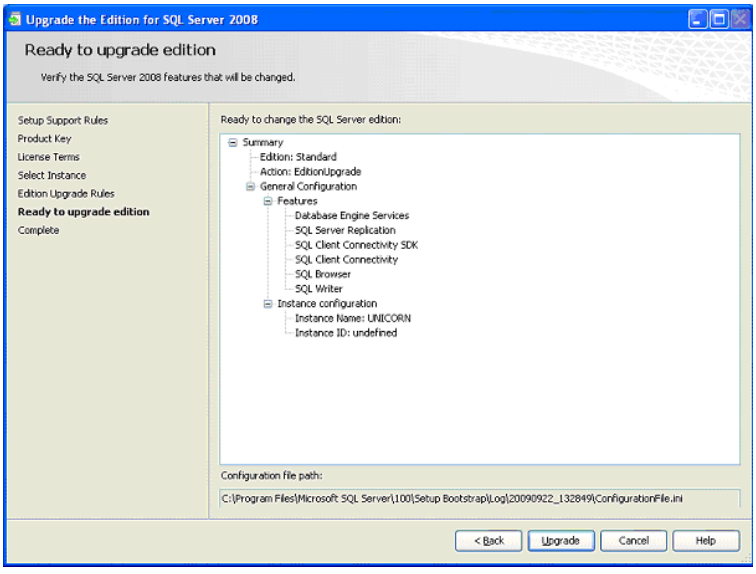
| | |
|---|---|
| 5 | The ***Select Instance*** dialog opens.<br>• Specify which SQL Server instance to upgrade<br>• Click the ***Next*** button to proceed. |



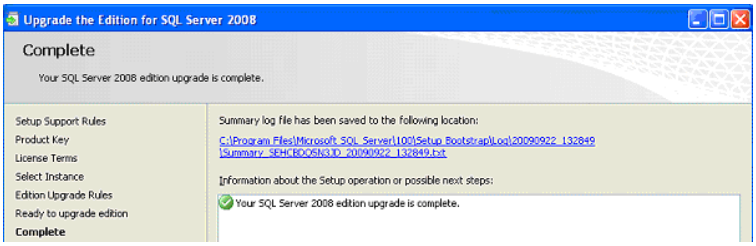
| Step | Action |
|---|---|
| 6 | The ***Edition Upgrade Rules*** dialog opens. A configuration validation is performed before the upgrade can proceed.<br>• After the validation is completed, click the ***Next*** button to proceed. |




| | |
|---|---|
| 7 | The ***Ready to upgrade edition*** dialog opens. A tree view of the selected installation options is shown.<br>• Click the ***Upgrade*** button to proceed.<br>During the upgrading process, the services will be restarted to register the new settings. |



| Step | Action |
|---|---|
| 8 | The ***Complete*** dialog opens. This dialog provides a link to a summary log file. |

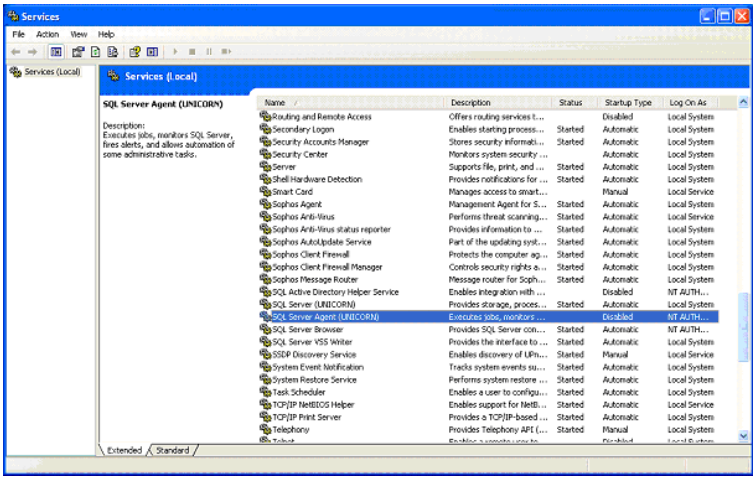

Upgrade the Edition for SQL Server 2008
Complete
Your SQL Server 2008 edition upgrade is complete.
Setup Support Rules
Product Key
License Terms
Select Instance
Edition Upgrade Rules
Ready to upgrade edition
Complete
Summary log file has been saved to the following location:
C:\Program Files\Microsoft SQL Server\100\Setup Bootstrap\Log\20090922_132849
\Summary_SEHCBDOSN3D_20090922_132849.txt
Information about the Setup operation or possible next steps:
Your SQL Server 2008 edition upgrade is complete.

- Read the information in the log file and on the ***Complete*** page.
- Click the ***Close*** button to close the wizard dialog.
- Close the ***SQL Server Installation Center*** dialog.
- If necessary (this will be listed in the summary) restart the server computer.

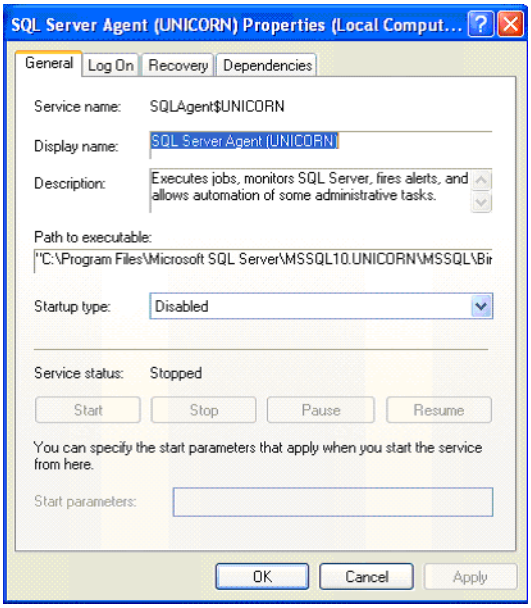
## Actions after the upgrade

After the upgrade is finished, you must perform the following steps:

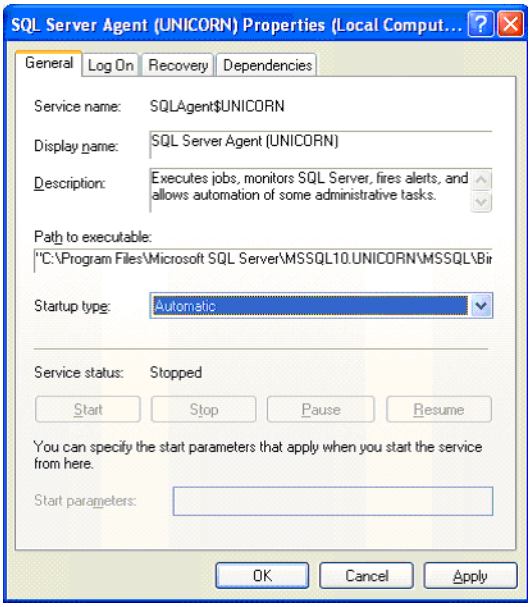
| Step | Action |
|---|---|
| 1 | • Open the Windows ***Services Control Manager***. (***Control Panel:Administrative Tools:Services***)<br>• Locate and select the ***SQL Server Agent***. |

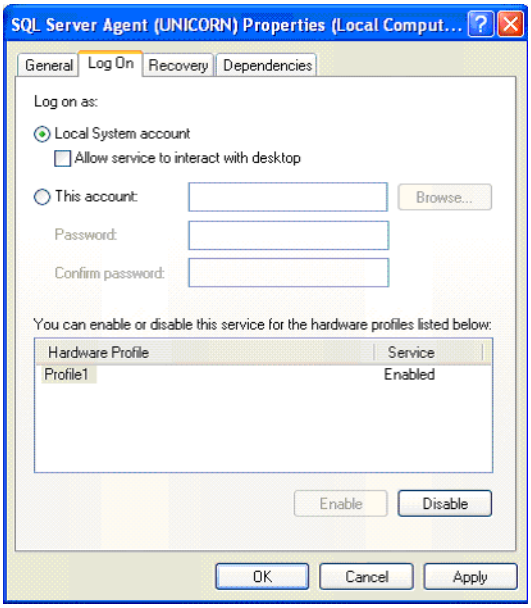


| Step | Action |
|---|---|
| 2 | Right-click and choose the ***Properties*** menu item.<br>*Result*: The ***SQL Server Agent Properties*** dialog opens. |



| Step | Action |
|---|---|
| 3 | Choose the ***Automatic*** option from the ***Startup type*** menu. |



| Step | Action |
|---|---|
| 4 | Click the ***Log On*** tab and select to let the ***SQL Server Agent*** log on as ***Local System*** account.<br>  |
| 5 | • Click the ***Apply*** button to apply the changes.<br>• Click ***OK*** to close the ***Properties*** dialog.<br>• Close the ***Services Control Manager*** and the ***Administrative Tools*** dialogs. |
| 6 | Re-enable the scheduled database backup. This is described in *Section 4.2.1 Database backup, on page 195*.<br>***Note:*** *Verify that the scheduled database backups are performed.* |

# 5 Security

## Introduction

This chapter presents the security concepts and features of a UNICORN installation. The concepts and features are good to know since they are also used in other parts of this manual.

## In this chapter

The table below describes the contents of this chapter:


| Section | See page |
|---|---|
| 5.1 Access security | 225 |
| 5.2 Connection security | 226 |
| 5.3 Data security | 227 |

# 5.1 Access security

## Purpose

The purpose of access security is to avoid unauthorized user access to the UNICORN system.

## Passwords to restrict access

User access is often restricted by means of a password. There are some password rules that are important keep in mind:

- The password must have a minimum number of characters. The minimum length is defined when UNICORN is installed, see *Section 2.3 Stand-alone workstation installation and configuration, on page 32*.
- The password should be changed regularly if access security is very important. See *Section 3.2.5 User passwords and account access limitations, on page 180*.

## Access groups

Each user is assigned to an access group that defines the operations that the user can perform. The purpose of the access groups is to restrict access to sensitive functions in UNICORN for users without the necessary qualifications or areas of responsibility to operate these functions.

Access groups are described in *Section 3.2.1 User access groups, on page 160*.

## Delete default user

When you install UNICORN, a default user with full access rights is automatically created. For system security reasons the default user must be deleted when you have created the site-specific users.

## Maintain system security

To maintain system security, only the system administrator should be allowed to carry out administrative routines such as user setup and system definitions.

# 5.2 Connection security

## Purpose

The purpose of connection security is to avoid conflicts regarding system control, so that only one user at a time controls the chromatography system.

## Control mode and View mode connections

Two kinds of connection modes can be established with the UNICORN system:

- ***Control*** mode connection: The user has full system control, that is control of the chromatography system.
- ***View*** mode connection: The user can view the process but not control it.

To prevent conflicts, the system can have only one control mode connection at a time, that is only one user at a time can control the process.

## Prevent unwanted system control mode connections

To prevent other users from establishing a control mode connection to the system, a user should establish a ***Control*** mode connection to the system. This will prevent any other user from assuming control.

***Note:*** *If a user leaves the system in a **View** mode connection, any other user may establish a control mode connection to the system.*

## When to maintain control over a system

It is recommended that control over systems are maintained when a user leaves the system temporarily. When the system is controlled, the responsible user is identified in the ***Connected Users*** dialog. A system which is left with no ***Control*** mode connection has no identified responsible user.

# 5.3 Data security

## Introduction

Data security prevents the loss of results of a run due to failure in the network communication or the local station.

## Contents

The table below describes the contents of this section:


| Section | See page |
|---|---|
| 5.3.1 Network communication failure - remote station | 228 |
| 5.3.2 Network communication failure – local station | 229 |
| 5.3.3 Local station communication failure | 230 |

# 5.3.1 Network communication failure - remote station

## If the network communication fails

If the network communication fails while a method is running, the remote station will lose control of the system. Then the following will happen:

- After 30 seconds, the remote station client is disconnected by the instrument server. The run continues under the control of the instrument server. No other connected client will be affected.
- The remote station will display a message that it is disconnected. You can try to connect again after a minute and if that fails, you must check the condition of the general network connections.

# 5.3.2 Network communication failure – local station

## If the network communication fails between a local station and the network

The table below describes what happens when the network communication fails between a local station and the network.

| Stage | Description |
|---|---|
| 1 | The local station will lose contact with the database server and other client stations, but the contact with the locally connected instrument is maintained [7].<br>Any remote station that is connected to this instrument will be disconnected automatically after 30 seconds. |
| 2 | The run on the connected instrument continues as normal. Result data is saved locally on the local station hard drive. If the local station tries to perform actions that require a database connection, an error message will be displayed suggesting that UNICORN is restarted and a log on without database connection is performed. |
| 3 | If the network connection isn't restored when the run is completed, the result data is still saved locally pending a restored connection. |
| 4 | When the network connection is restored and a user tries to assume control over the system, the user will be asked if the temporarily stored result data should be uploaded into the database or discarded. |

7 This assumes that the local station is equipped with two network interface cards.

# 5.3.3 Local station communication failure

## If the network communication fails between a local station and the instrument

The table below describes what happens when the network communication fails between a local, instrument server station and the ÄKTA avant instrument.

| Stage | Description |
|---|---|
| 1 | The run will be terminated. |
| 2 | The result data is saved and the run log will show that the run was terminated before it should have been completed. |
| 3 | A message is displayed at all connected client stations requesting a restart of the instrument.<br>***Note:*** *You must be connected in control mode to be able to restart the system.* |

# 6 Troubleshooting

## Introduction

This chapter describes different operational scenarios which may arise in UNICORN and their solutions or consequences.

**Tip:** For additional advice concerning operational scenarios and possible solutions, refer to the UNICORN Information Letter. The UNICORN Information Letters are available at www.gelifesciences.com/unicorn.

## Contents

This chapter contains these sections:


| Section | See page |
|---|---|
| 6.1 Troubleshooting: User, function or system access | 232 |
| 6.2 Troubleshooting: Network access | 236 |
| 6.3 Troubleshooting: Database functions | 237 |
| 6.4 System Error Reports | 238 |

# 6.1 Troubleshooting: User, function or system access

## In this section

This section describes the following scenarios:

- Log on access problems
- Unable to access UNICORN functions
- Unable to connect or locate systems or computer stations

## User Access

| Problem description | Solution |
|---|---|
| Username and password not accepted | • The UNICORN administrator should check if the user account is locked.<br>(for example after too many unsuccessful log on attempts)<br>• The UNICORN administrator can try to set a new password.<br>• If a password reset does not work, the user profile may have to be deleted and new profile be created. |
| The log on dialog is inactive and a password cannot be entered | 1 Verify that no UNICORN window or module is opened.<br>2 Restart Windows. |
| The license server cannot be contacted or no licenses are available | 1 Verify that the available number of licenses have not been exceeded<br>2 Restart the license server computer |
| An error message is displayed, stating that a connection to the e-license server cannot be established. | This can happen if an incorrect Ethernet address (MAC address) has been entered for the e-license, causing a mismatch.<br>1 Verify that the e-license server is accessible from the network.<br>2 Contact GE Healthcare for assistance in verifying the validity of the e-license. |

## Access to UNICORN functions

| Problem description | Solution |
|---|---|
| UNICORN modules are not available for selection in the ***Log On*** dialog. | • Check that the modules in question are not already open.<br>• The UNICORN administrator should open the ***User Setup*** in the ***Administration*** module to verify that the user has access to the modules in question. |
| Functions to which you do not have access appear grey in the menus or cannot be accessed | Choose ***Tools:User Setup*** in the ***Administration*** module to change the user profile access rights as needed. |
| The ***Manual*** menu commands in the ***System Control*** are grey, that is you can establish a connection but cannot control the system. | • Check that no other user has a control mode connection.<br>• Check that you have access rights to control the system manually. |
| Methods or results cannot be edited even though they are not used by another user | Unlock the method or result using the ***Database Management Release Objects*** function in the ***Administration*** module.<br>This is described in *Section 4.2.5 Release locked database objects, on page 209*. |
| The help viewer cannot be opened using help buttons or the **F1** key. | 1 Open the MadCap help viewer from the Windows desktop icon. This is described in *The help viewer application, on page 30*.<br>2 Try the help button or **F1** key again. |
| The Microsoft™ Office Document Image Writer causes UNICORN to terminate. | This writer application will not work. Choose another option, for example a PDF writer application. |
| An error message is shown when a run is started, stating that not enough disc space is available. | 1 GB of free disc space is required as headroom before a run can be started, to ensure that all data can be accommodated. |

## System connections

| Problem description | Solution |
|---|---|
| The connections are not available, i.e. the selection checkbox is greyed out. | • Check if system has been deactivated.<br>• Check that the power to the chromatography system is turned on.<br>• Check the connection between the PC and the chromatography system. |
| The connections are not available even though<br>• the connection between the PC and chromatography system appears to be correct<br>• the power is turned on. | 1 Switch off the chromatography system.<br>2 Quit UNICORN.<br>3 Shut down the instrument server computer.<br>4 Restart the chromatography system.<br>5 Restart the instrument server computer.<br>6 Log on to UNICORN. |
| A system is not available when you attempt to establish a connection. | • Check that you have access rights to the system. Access rights are not automatically assigned for a newly defined system.<br>• The system may not be active.<br>• Log off and log on again for access rights changes to be applied. |
| You receive the error message “Cannot connect to system...” in a network installation. | • Check that the local computer to which the system is connected is turned on and logged on to the network.<br>• Check that the computer from which you try to establish a connection is logged on to the network.<br>• Check that the limit of five simultaneous connections to the system has not been exceeded. |
| You receive the error message "Warning, system occupied" when trying to connect. | This error message is displayed if a system is defined and active in two different database instances and is already connected in the other instance. It is not recommended to have a system defined and active in more database instances than one. |

| Problem description | Solution |
|---|---|
| You are connected to a system but have no contact with the instrument. The system hangs at initialization. | • Check that the instrument is turned on.<br>• Check that all cable connections are intact.<br>• Check that the system is configured correctly, in ***System Properties*** and on the instrument display.<br>• If the above actions do not help, try to restart both the instrument server computer and the instrument. |

## Installation and de-installation

| Problem description | Solution |
|---|---|
| An error message stating that your access rights are insufficient appears when you try to de-install UNICORN from the Windows 7 ***Add or Remove Programs*** dialog. | This is caused by Windows 7 UAC. Turning off UAC may solve this problem. If not, use the software removal procedure from the UNICORN 6.1 installation DVD. |

# 6.2 Troubleshooting: Network access

## In this section

This section describes the following scenario:

Windows XP computers cannot communicate properly within a Windows Workgroup.

## Connection problems for Windows XP computers in Workgroups

| Scenario | Solution |
|---|---|
| Connection between Windows XP computers in a Windows Workgroup is not working properly. | This problem may be resolved by making an exception in the firewall settings and allow ***File and printer sharing***.<br>***Note:*** *Use caution when applying this solution as this may make the computers more vulnerable for malware, trojans or other attacks.* |

# 6.3 Troubleshooting: Database functions

## In this section

This section describes the following scenarios

- The database is unavailable
- Database backup is not performed

## Database functions

| Problem description | Solution |
|---|---|
| The database is not available at log on | • Wait a couple of minutes to allow the SQL Server services to start and try to log on again.<br>(This may be necessary when logging on after a computer re-start)<br>• Verify in the Windows Services dialog that the SQL Server and SQL Server Browser services are running properly.<br>• Verify that the firewall settings allow access.<br>(See *Section 2.4.3 Configure the network, on page 78* for port settings) |
| The database cannot be located at the installation of a client/instrument server computer. | Sometimes the computer name of the database server cannot be identified. In that case, enter the IP address instead. |
| The scheduled database backups are not performed | Re-set the scheduled backup in the Database backup wizard.<br>If another SQL Server edition than SQL Server Express is used, you may need to verify that the service SQLAgent has started. |

# 6.4 System Error Reports

## Introduction

The ***Generate System Error Report Wizard*** is used to generate problem reports. The report can provide useful background information for the support staff when trying to provide solutions to problems or suggestions for improved system performance.

## Step 1: Create an error report

This table below describes how to activate the ***Generate System Error Report Wizard*** and create a report:

| Step | Action |
|---|---|
| 1 | • Choose the ***Reports:Create System Error Report*** menu command in the ***Administration*** module[8].<br>*Result*: The ***Generate System Error Report Wizard*** opens.<br>***Note:*** *If an error occurs during a method run you can also start the wizard by clicking the* ***Report*** *button in the error message dialog.*<br>• Click the ***Next*** button. |

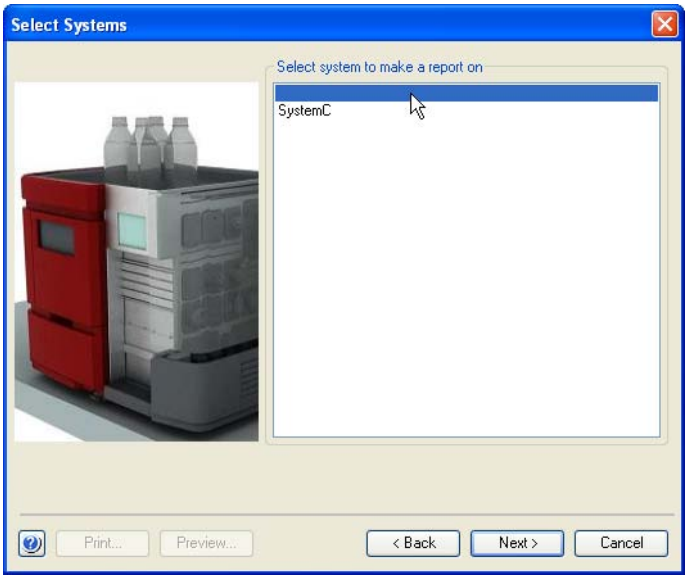
8 You can also create an error report from ***System Control*** by choosing ***System:Create System Error Report***. A system must be connected. The report will be created for the connected system and step 2 in the instruction above will be omitted.

| Step | Action |
|---|---|
| 2 | The ***Select Systems*** dialog is displayed, showing all accessible systems. |

**Tip:** In this and all subsequent dialogs you can always click the ***Back*** button to return to previous dialogs and change the entries.

- Select the system that the error is connected to.
- Click the ***Next*** button.

***Note:*** *If the problem is general, related to the UNICORN software and cannot be connected to a specific system you do not have to select a system in this step. Ensure that the empty space above the first system is selected (as illustrated below) and click **Next** to proceed. However, it is an advantage in subsequent troubleshooting if at least one system can be referenced.*




3 The ***Error Description*** dialog opens.

Add the following information:

- A short description of the problem.
- The circumstances under which the problem occurs.
- The consequences of the problem.

Click the ***Next*** button.

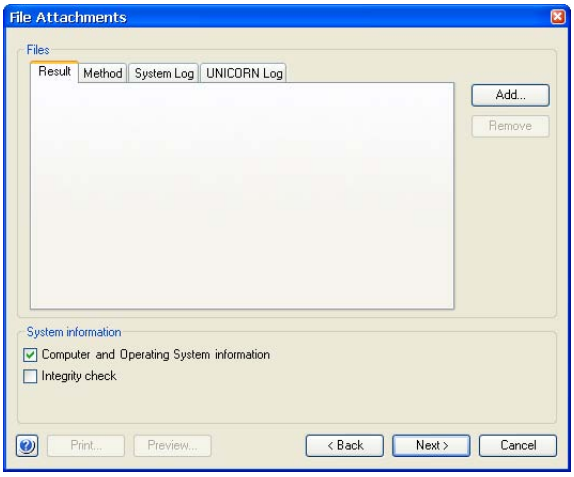
| Step | Action |
|---|---|
| 4 | The ***Error Reproducibility*** dialog opens.<br>• Specify whether the problem is reproducible or not. Select one of these alternatives:<br>• - ***Yes***<br>(Provide a short description in the text box of how the problem can be reproduced.)<br>- ***No***<br>- ***Unknown***.<br>• Click the ***Next*** button.<br>*Result*: The ***File Attachment*** dialog opens. |
| 5 | Go to step 2 below. |

## Step 2: Attach example files

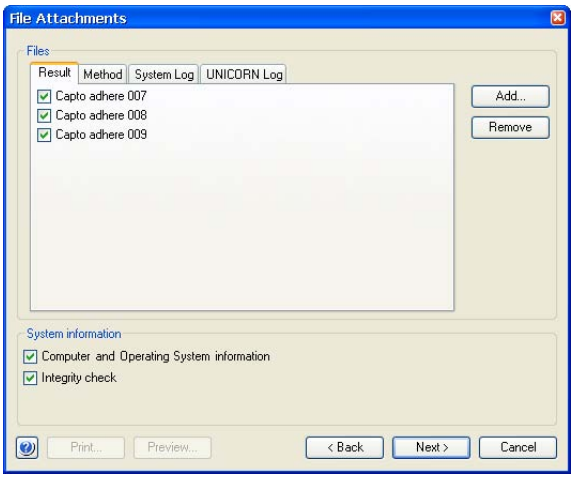
You can attach results, methods and/or UNICORN log files to the problem report.

The table below describes how to attach a file:

| Step | Action |
|---|---|
| 1 | The ***File Attachments*** dialog box is displayed: |



| Step | Action |
|---|---|
| 2 | • Depending on the character of the file to be attached, select the appropriate tab: ***Result***, ***Method***, ***System Log*** or ***UNICORN Log***.<br>• Attach a file:<br>- Click the ***Add*** button.<br>- Select a file in the dialog and click the ***Attach*** button.<br>*Result*: The selected file is added to the tab in the ***File Attachments*** dialog. |




**Tip:** To remove a file from the tab, select the checkbox and click the ***Remove*** button.

When attaching the ***UNICORN Log***, a separate dialog will open. Choose the time period for the attached log.

| Step | Action |
|---|---|
| 3 | To include more information in the report, select the appropriate check boxes in the ***System information*** field.<br>**Computer and Operating System information**<br>A summary of the computer and operating system information, for example type of processor, processor speed, RAM, hard disk capacity and printer.<br>**Integrity check**<br>When UNICORN is installed a checksum calculation is performed on the stationary files (*.dll and *.exe) for the system. An integrity check means that a new checksum calculation is performed for the same files in their folders. This new calculated value is compared to the checksum value obtained during installation. The results of the comparison are presented in the report and any deviations are included.<br>• Click the ***Next*** button.<br>*Result*: The ***Generate System Error Report*** dialog is displayed. |
| 4 | Go to step 3 below. |

## Step 3: Generate and save the report

The table below describes how to generate and save the report.

| Step | Action |
|---|---|
| 1 | By default, the report is saved as a zip file in the UNICORN folder on your local computer.<br>If you want to save the report in another location, click the ***Browse*** button and select a destination folder. |
| 2 | You also have these options:<br>• Click the ***Preview*** button to open the report in Notepad.<br>• Click the ***Print*** button to print the report without any preview. |
| 3 | • Click the ***Finish*** button.<br>*Result*: The report is generated and saved and the wizard dialog closes. |

# Appendix A Technical specifications

## Introduction

This appendix describes

- the UNICORN system recommendations
- UNICORN's capability to control chromatography systems
- how UNICORN samples data from the chromatography systems.

## Contents

The table below describes the contents of this appendix:


| Section | See page |
|---|---|
| A.1 System recommendations | 244 |
| A.2 UNICORN 6.1 control capacity | 246 |
| A.3 Data sampling | 248 |

# A.1 System recommendations

## Introduction

This section describes some general technical specifications for UNICORN 6.1 computers.

## General computer specifications

The table below describes the recommended computer specifications for a UNICORN 6.1 system operating with ÄKTA avant instruments:

| | Full installation | UNICORN Remote client | UNICORN Database and E-license Server | UNICORN Instrument Server and local client |
|---|---|---|---|---|
| Minimum free disc space | 11 GB | 1 GB | 6 GB | 5 GB |
| Minimum available RAM | 3 GB (both Windows XP and Windows 7 ) | 2 GB on Windows XP<br>3 GB on Windows 7 | 2 GB on Windows XP<br>3 GB on Windows 7 | 2 GB on Windows XP<br>3 GB on Windows 7 |
| Disc format | NTFS | NTFS | NTFS | NTFS |
| Operating systems including service packs | Windows XP Professional , SP3<br>Windows 7 Professional | Windows XP Professional , SP3<br>Windows 7 Professional | Windows XP Professional , SP3<br>Windows 7 Professional | Windows XP Professional , SP3<br>Windows 7 Professional |
| Operating system language | English (US) | English (US) | English (US) | English (US) |
| Architecture | x86, Dual Core (or more) | x86, Dual Core (or more) | x86, Dual Core (or more) | x86, Dual Core (or more) |

***Note:***

- *UNICORN 6.1 is tested using an English operating system version. Using other language versions of the operating system may cause errors.*
- *A screen resolution of 1280x1024 or better is recommended. Parts of the UNICORN 6.1 user interface may not be displayed properly using a lower resolution.*
- *Changing the default font and font size in Windows may cause problems in the UNICORN 6.1 user interface.*
- *The Windows basic color scheme is recommended*[1].
- *Using the Windows 7 Aero color scheme is not recommended.*
- *Windows power save features should be turned off to avoid conflicts with system operations.*
- *UNICORN 6.1 is not compatible with the Windows 7 feature High DPI Awareness, which allows the graphic user interface to be scaled. The interface scale must remain at 100% to avoid issues with clipping and misaligning of parts of the UNICORN user interface. Normally, the scale is set at 100% by default.*

1 *UNICORN must be closed when the color scheme is changed.*

# A.2 UNICORN 6.1 control capacity

## Introduction

This section describes the capability of UNICORN 6.1 to control systems in stand-alone installations and network installations.

## Stand-alone installations

In a stand-alone installation the workstation computer can be connected to a single ÄKTA avant instrument.

## Network installations

The list below describes some basic facts and recommendations about network installations:

- Instruments should be locally linked to an instrument server computer, which is linked to the network. It is strongly recommended that the instruments should not be *directly* linked to the network [2].
- Each local station can be connected to a single ÄKTA avant instrument.
- A database server can support between three to twenty clients [3]. This can be any combination of local stations with connected chromatography instruments, and remote stations in the network. The number of supported systems depend on the server solution and the network workload [4].
- A client computer can locally control one and remotely another two ÄKTA avant instruments. Alternatively, a client computer can control a total of three instruments remotely.

2 Although it is possible to connect instruments directly to a network, this is not recommended since it may have a negative impact on the communication between instrument and instrument server. With a peer-to-peer connection between each instrument server and instrument, the system operation is less vulnerable to network communication problems and the general network traffic load is reduced.

3 The SQL Server Express version distributed with the standard UNICORN 6.1 installation is suitable for up to three clients. For larger installations an upgrade of the SQL Server is recommended. This is described in *Section 4.3 SQL Server edition upgrade, on page 213*.

4 For larger organizations where more systems than twenty are used, it is a recommendation to use several servers with individual database instances, to avoid performance issues at peak workloads.

- Each chromatography system in UNICORN
  - can be *controlled* by only one active ***System Control*** module
  - can be *viewed* by four other ***System Control*** modules.
  - a total of five ***System Control*** modules may be connected to a single system in *view* mode, provided that no one is connected in *control* mode.

---

# A.3 Data sampling

## Data storage

Data from chromatography system monitors is stored temporarily in data buffers in the local instrument server during a run. It is transferred from the buffers to the database by UNICORN whenever a chromatogram is closed, that is when the ***New_Chromatogram*** instruction is issued or the result file is closed.

Data is also saved in a runtime backup on the instrument server local hard drive during a run, thus minimizing data loss in the event of power or communication failure.

## Data buffer capacity

The capacity of the data buffer is up to 180000 data points for each curve. The maximum number of data points may be set either to 18000, 54000 or 180000 data points. For most curves, the default setting is 54000 points. For common applications, the default setting will produce a resolution that is more than adequate.

***Note:*** *The data buffer capacity is listed in the* ***Data collection*** *group of* ***System:Settings*** *in the* ***System Control*** *module.*

## Effective sampling frequency

If a buffer is filled during a run, i.e 54000 points have been recorded, the number of points is halved by deleting every second point, leaving 27000 data points of the curve data. For subsequent sample points, every second point is dropped, thus halving the effective sampling frequency. When the curve again reaches 54000 points the process is repeated and the effective sampling frequency is halved once again. Now every fourth sampling point will be recorded.

***Note:*** *The real sampling frequency, i.e. the sampling frequency of the system, never changes.*

## Ensure maximum resolution

To ensure maximum resolution for a crucial part of a run, issue a ***New_Chromatogram*** instruction at the beginning of the part. This empties the data buffers, which will allow the selected maximum number of data points (e.g. 54000) to be recorded from this part of the run before the effective sampling frequency is reduced again.

# Appendix B Advanced system administration

## Introduction

This appendix contains additional information that is relevant for UNICORN 6.1 network deployments and details about Windows settings. It describes software settings and selections necessary in order for the UNICORN client and server computers to operate as intended in a network environment. Issues addressed include

- Prerequisite application installations
- Windows user names and passwords
- Services and ports used

The appendix also includes instructions for how to uninstall UNICORN 6.1 and SQL Server Express manually if the installation has become corrupted and cannot be uninstalled using the normal procedures.

## Contents

The table below describes the contents of this appendix:


| Section | See page |
|---|---|
| B.1 User, client computer and database server set up | 250 |
| B.2 Manual uninstallation | 269 |

# B.1 User, client computer and database server set up

## Introduction

This appendix provides information about the Windows user setup and computer settings necessary in network deployments. The appendix also contains information about basic computer configuration and prerequisite installations. Note that these settings will normally be performed as part of the normal installation procedure. Manual adjustments should not be necessary.

## Hard disk compression

The hard disks of the computers where UNICORN 6.1 is installed should not be compressed.

## Computer configuration with Windows XP

Follow the instructions below to configure a Windows XP computer before installing UNICORN:

| Step | Action |
|---|---|
| 1 | Install Windows XP Professional. Ensure that Service Pack 3 is included in the installation.<br>• Select US English as the Language Option.<br>• Set the regional settings to use the US standard for decimal delimiter, which is a decimal point (".").|
| 2 | Install any additional hardware drivers that may be needed, for example network, graphics, sound or chipset drivers.<br>See also *"Install extra network cards"* below. |
| 3 | Since a dual core computer is the recommended minimum for UNICORN 6.1, ensure that all cores of the processor are running. |

| Step | Action |
|---|---|
| 4 | Install the following prerequisite applications in the exact order listed below [1]:<br>1 ***{912F19C1-DFD2-487F-A168-2E98B5FFC30E}\WindowsXP-KB942288-v3-x86.exe***<br>(Microsoft Windows Installer 4.5)<br>***Note:*** *This installation will normally force a re-start of the computer.*<br>2 ***{FBAF5483-7C07-40A3-BD50-9B1FA8FDCA65}\dotnetfx35sp1.exe***<br>(Microsoft .NET Framework 3.5 SP1)<br>***Note:*** *This installation will normally force a re-start of the computer.*<br>3 ***{DA190F81-371E-49E3-A4DF-1E657E148FE5}\WindowsXP-KB926139-v2-x86-ENU.exe***<br>(Windows PowerShell 1.0)<br>4 ***{11BC222D-3482-4200-9C1A-1C004D2D6C2C}\msxml.msi***<br>(Microsoft Core XML Services 4.0 SP2)<br>5 ***{11BC222D-3482-4200-9C1A-1C004D2D6C2C}\msxml6.msi***<br>(Microsoft Core XML Services 6.0)<br>***Note:*** *If MSXML 6.0 SP2 is already installed, this installation may fail. If so, this step can be skipped and the newer version will work as intended.*<br>6 ***{E9D60B10-81E0-4ED1-A3D7-153977F29467}\vcredist_x86.exe***<br>(Microsoft Visual C++ 2005 Redistributable Package)<br>7 ***{804B91BB-13B3-4299-ABEF-7589287A211E}\OPC Core Components Redistributable (x86).msi***<br>(OPC Core Components) |
| 5 | Verify that all cores of the processor are still running. |

| Step | Action |
|---|---|
| 6 | Turn off Windows Update:<br>1 Open the Windows ***Control Panel*** (in ***Category View***).<br>2 Choose ***Security Center***.<br>3 Choose ***Automatic Updates***.<br>*Result:* The ***Automatic Updates*** dialog opens.<br>4 Select the ***Turn off Automatic Updates*** option.<br>5 Click the ***OK*** button to apply the settings and close the dialog.<br>6 Close the ***Windows Security Center*** dialog.<br>Proceed with the next step without closing the ***Control Panel***. |
| 7 | Disable power save mode:<br>1 Choose ***Performance and Maintenance*** in the ***Control Panel***.<br>2 Choose ***Power Options***.<br>*Result:* The ***Power Options Properties*** dialog opens.<br>3 Disable all power save settings.<br>4 Click the ***OK*** button to apply the settings and close the dialog.<br>5 Close the ***Performance and Maintenance*** dialog. |
| 8 | Turn off the Windows screen saver:<br>1 Right-click anywhere in the Windows desktop and choose ***Properties*** from the shortcut menu.<br>2 Click the ***Screen Saver*** tab.<br>3 Choose ***[None]*** from the ***Screen Saver*** menu.<br>4 Click the ***OK*** button to apply the settings and close the dialog. |

1 All listed prerequisites are available on the UNICORN 6.1 installation DVD in the ISSetupPrerequisites folder.

## Computer configuration with Windows 7

Follow the instructions below to configure a Windows 7 computer before installing UNICORN:

| Step | Action |
|---|---|
| 1 | Install Windows 7 Professional Edition.<br>• Select US English as the Language Option.<br>• Set the regional settings to use the US standard for decimal delimiter, which is a decimal point (".").<br>2 Install any additional hardware drivers that may be needed, for example network, graphics, sound or chipset drivers.<br>See also *"Install extra network cards"* below.<br>3 Since a dual core computer is the recommended minimum for UNICORN 6.1, ensure that all cores of the processor are running.<br>4 Install the following prerequisite applications in the exact order listed below [1]:<br>1 ***{E9D60B10-81E0-4ED1-A3D7-153977F29467}\vcredist_x86.exe***<br>(Microsoft Visual C++ 2005 Redistributable Package)<br>2 ***{804B91BB-13B3-4299-ABEF-7589287A211E}\OPC Core Components Redistributable (x86).msi***<br>(OPC Core Components)<br>5 Verify that all cores of the processor are still running.<br>6 Turn off Windows Update:<br>1 Open the Windows ***Control Panel*** (in ***Category View***).<br>2 Choose ***Windows update***.<br>3 Choose ***Change settings***.<br>*Result:* The ***Change settings*** dialog opens.<br>4 Select the ***Never check for updates*** option.<br>5 Click the ***OK*** button to apply the settings and close the dialog.<br>6 Click the ***Back*** button to return to the ***Control Panel***.<br>Proceed with the next step without closing the ***Control Panel***. |

| Step | Action |
|---|---|
| 7 | For some graphic cards, the Windows 7 Aero color scheme will be selected by default. If this is the case, the Windows 7 Aero color scheme must be turned off manually:<br>1 Choose ***Appearance and personalization***.<br>2 Choose ***Change the color scheme*** under ***Personalization***.<br>*Result:* The ***Appearance Settings*** dialog opens.<br>3 Set the ***Color scheme*** to ***Windows 7 Basic***<br>and<br>4 click the ***OK*** button.<br>5 Close the ***Control Panel***. |
| 8 | Turn off the Windows screen saver:<br>1 Right-click anywhere in the Windows desktop and choose ***Properties*** from the shortcut menu.<br>2 Click the ***Screen Saver*** tab.<br>3 Choose ***[None]*** from the ***Screen Saver*** menu.<br>4 Click the ***OK*** button to apply the settings and close the dialog. |

1 All listed prerequisites are available on the UNICORN 6.1 installation DVD in the ISSetupPrerequisites folder.

## Windows user names and passwords

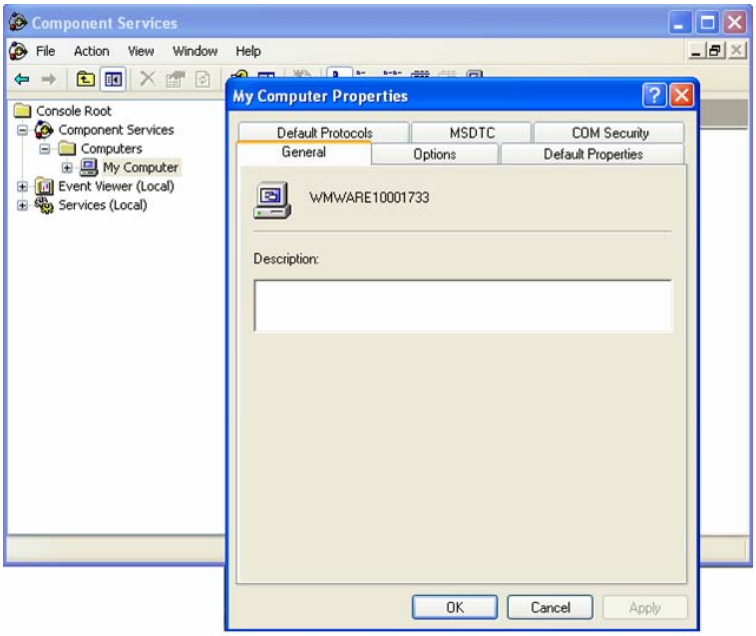
Unless a domain controller is used, all users must have exactly the same user name and password on all computers running UNICORN. If a domain controller is used, the users will be created at the domain controller and not on each computer. This eliminates the need for synchronized user names and passwords.

## Component services

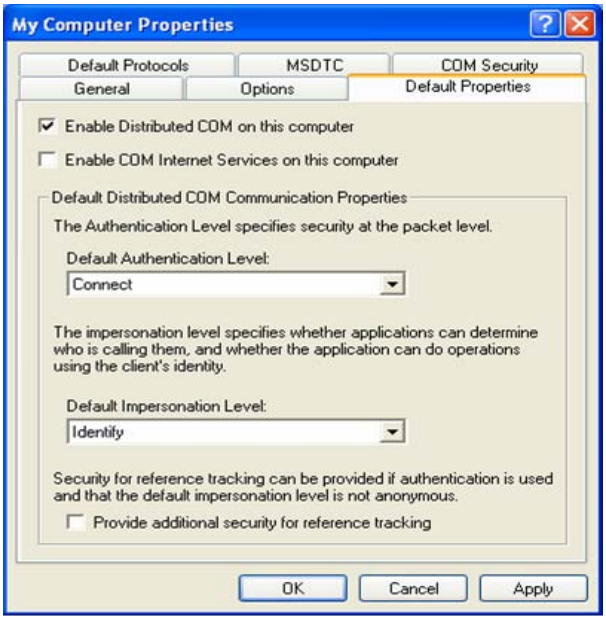
The table below describes the steps for how to set up the ***Component Services*** settings on a UNICORN computer.

### My Computer Properties - Windows XP

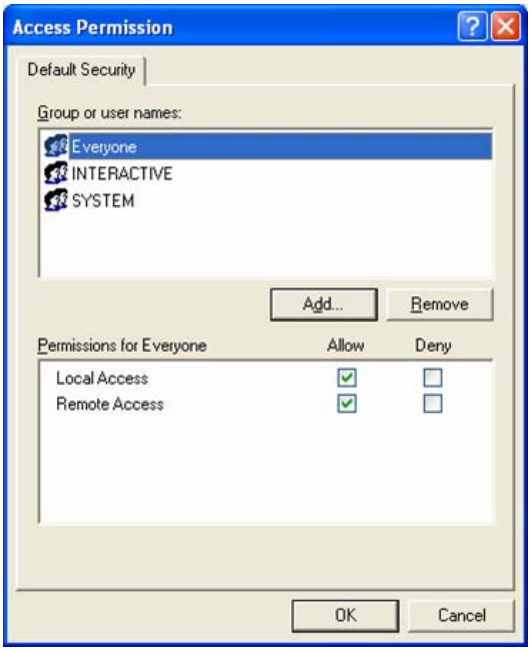
| Step | Action |
|---|---|
| 1 | • Open the ***Administrative Tools*** dialog from the Windows ***Control Panel***.<br>and<br>• double-click the ***Component Services*** icon to open the dialog. |
| 2 | Select ***Component Services*** in the tree structure and expand the tree to show ***My Computer***. |
| 3 | Right-click ***My Computer*** and choose ***Properties*** to open the ***My Computer Properties*** dialog. |



| Step | Action |
|---|---|
| 4 | Click the ***Default Properties*** tab and select the following:<br>• ***Enable Distributed COM on this computer***<br>• ***Default Authentication Level*** set to ***Connect***<br>***Note:*** *Client and server computers should all have corresponding* ***Default Authentication Level*** *settings and be in the same domain.* |


My Computer Properties
Default Protocols
MSDTC
COM Security
General
Options
Default Properties
Enable Distributed COM on this computer
Enable COM Internet Services on this computer
Default Distributed COM Communication Properties
The Authentication Level specifies security at the packet level.
Default Authentication Level:
Connect
The impersonation level specifies whether applications can determine who is calling them, and whether the application can do operations using the client's identity.
Default Impersonation Level:
Identify
Security for reference tracking can be provided if authentication is used and that the default impersonation level is not anonymous.
Provide additional security for reference tracking
OK
Cancel
Apply

| Step | Action |
|---|---|
| 5 | Click the ***COM Security*** and click the ***Edit Default*** button in the ***Access Permissions*** field, to open the ***Access Permission*** dialog.<br>• Add the group ***Everyone*** with permissions for ***Local Access*** and ***Remote Access***.<br>• Click ***OK*** to apply and close the dialog. |




| | |
|---|---|
| 6 | • Click the ***MSDTC*** tab<br>and<br>• click the ***Security Configuration*** button. |

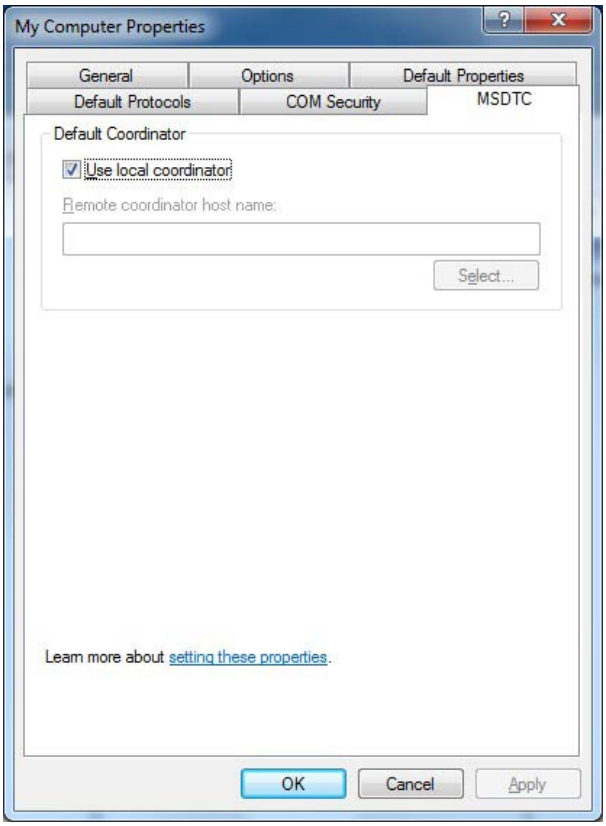
| Step | Action |
|---|---|
| 7 | Select the following options in the ***Security Configuration*** dialog:<br>• ***Network DTC Access***<br>  - ***Allow Remote Clients***<br>• ***Transaction Manager Communication***<br>  - ***Allow Inbound***<br>  and<br>  - ***Allow Outbound***<br>• ***Enable XA Transactions*** |

| | |
|---|---|
| 8 | Click ***OK*** to apply the changes and close the ***Security Configuration*** dialog. |
| 9 | Click ***OK*** to close the ***My Computer Properties***.<br>Proceed with the *UNICORN Instrument Server Properties* settings described below. |

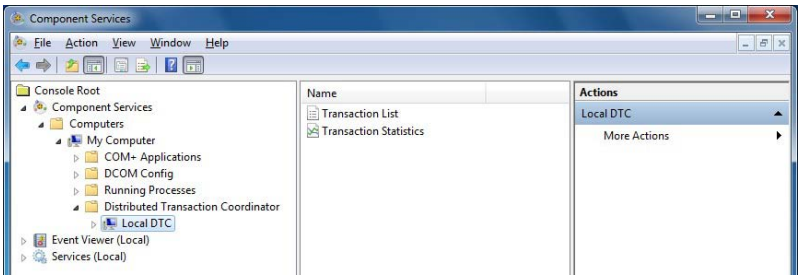
### My Computer Properties - Windows 7

| Step | Action |
|---|---|
| 1 | • Type "component services" in the Windows Start menu search field and<br>• click the ***Component Services*** item that is displayed as the search result. |
| 2 | Select ***Component Services*** in the tree structure and expand the tree to show ***My Computer***. |
| 3 | Right-click ***My Computer*** and choose ***Properties*** to open the ***My Computer Properties*** dialog. |
| 4 | Click the ***Default Properties*** tab and select the following:<br>• ***Enable Distributed COM on this computer***<br>• ***Default Authentication Level*** set to ***Connect***<br>***Note:*** *Client and server computers should all have corresponding* ***Default Authentication Level*** *settings and be in the same domain.* |
| 5 | Click the ***COM Security*** and click the ***Edit Default*** button in the ***Access Permissions*** field, to open the ***Access Permission*** dialog.<br>• Add the group ***Everyone*** with permissions for ***Local Access*** and ***Remote Access***.<br>• Click ***OK*** to apply and close the dialog. |

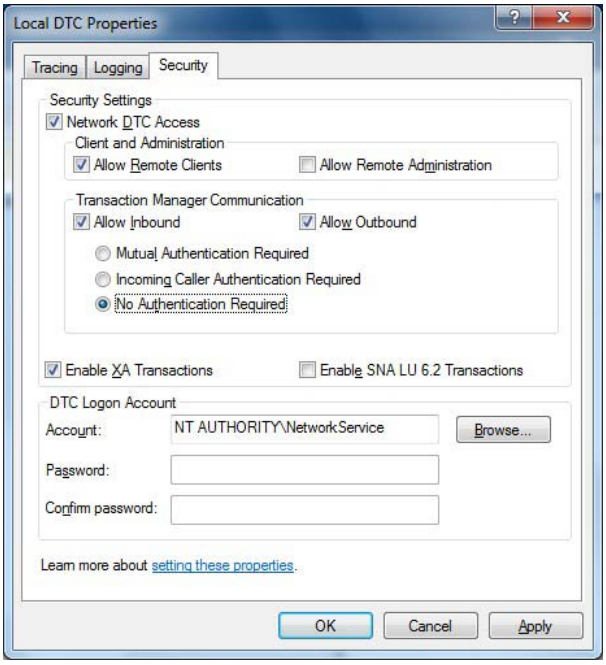
| Step | Action |
|---|---|
| 6 | • Click the ***MSDTC*** tab<br>and<br>• verify that ***Use local coordinator*** is selected. |




| | |
|---|---|
| 7 | Click ***OK*** to close the ***My Computer Properties***. |

| Step | Action |
|---|---|
| 8 |  <br>• Under ***My Computer*** in ***Component Services***, expand ***Distributed Transaction Coordinator***<br>• right-click on ***Local DTC***<br>and<br>• select ***Properties***<br>*Result:* The ***Local DTC Properties*** dialog opens. |

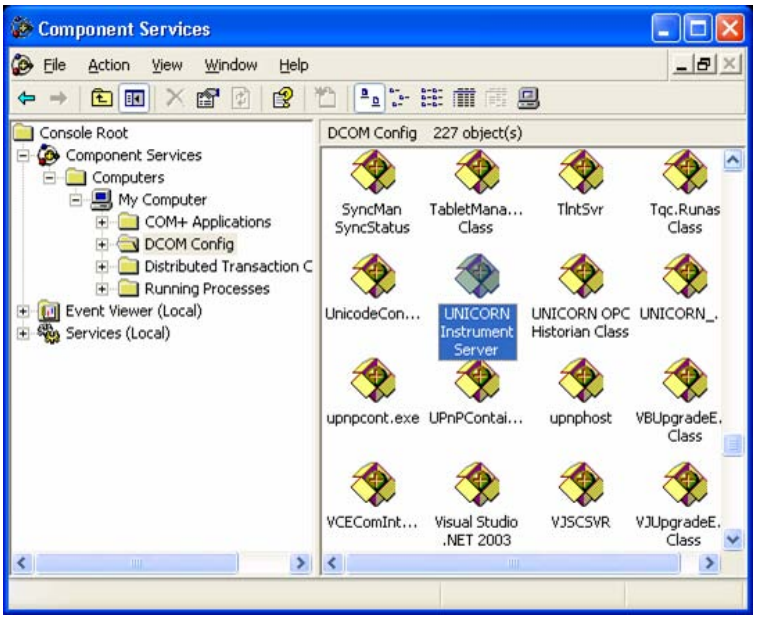
| Step | Action |
|---|---|
| 9 | Click the ***Security*** tab and select the following options:<br>• ***Network DTC Access***<br>  - ***Allow Remote Clients***<br>• ***Transaction Manager Communication***<br>  - ***Allow Inbound***<br>  and<br>  - ***Allow Outbound***<br>  - ***No Authentication Required***<br>• ***Enable XA Transactions*** |



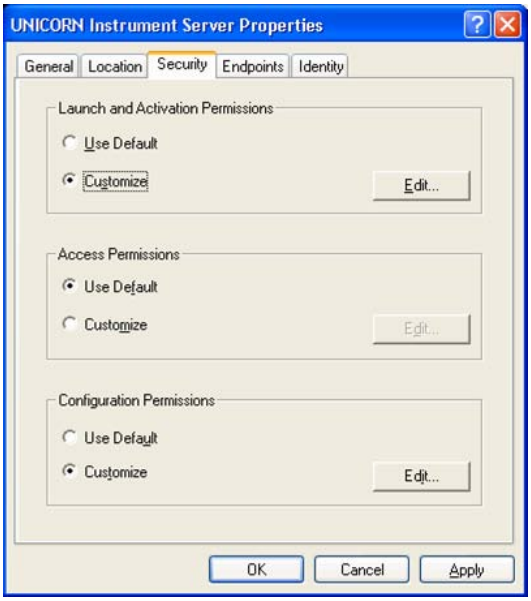

| | |
|---|---|
| 10 | Click ***OK*** to apply the changes and close the ***Local DTC Properties*** dialog. |
| 11 | Proceed with the *UNICORN Instrument Server Properties* settings described below. |

### UNICORN Instrument Server Properties

| Step | Action |
|---|---|
| 1 | • Select the ***DCOM Config*** folder<br>and<br>• locate and select the ***UNICORN Instrument Server*** icon. |

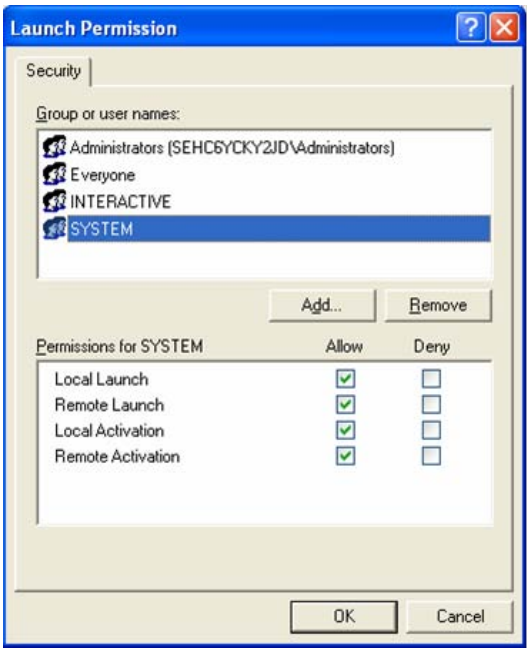


| Step | Action |
|---|---|
| 2 | Right-click the icon and choose ***Properties*** to open the ***UNICORN Instrument Server Properties*** dialog. |



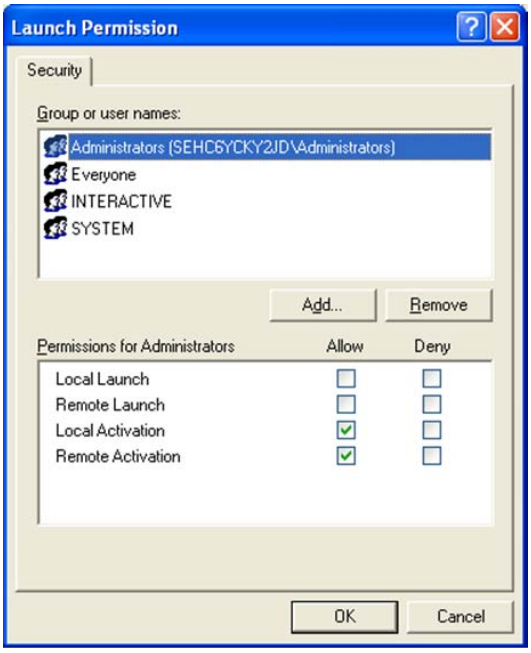

| | |
|---|---|
| 3 | • Click the ***Security*** tab<br>• Select ***Customize*** in the ***Launch and Activation Permissions*** field and<br>• click the ***Edit*** button to open the ***Launch Permission*** dialog. |

| Step | Action |
|---|---|
| 4 | Select the ***SYSTEM*** user and choose ***Allow*** for all permissions: |

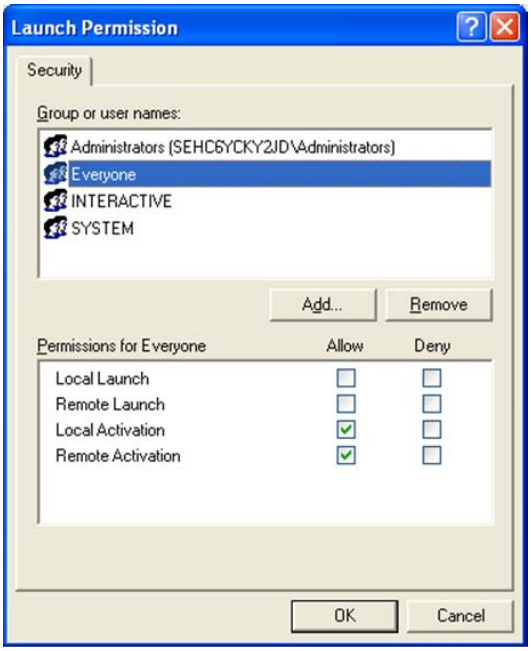



***Note:*** *Only the **SYSTEM** user should have **Launch** permissions.*

| Step | Action |
|---|---|
| 5 | Select the ***Administrators*** user and choose ***Allow*** for the ***Local Activation*** and ***Remote Activation*** permissions: |



| Step | Action |
|---|---|
| 6 | Select the ***Everyone*** user and choose ***Allow*** for the ***Local Activation*** and ***Remote Activation*** permissions: |




| | |
|---|---|
| 7 | • Click ***OK*** to apply the changes and close the ***Launch Permissions*** dialog.<br>• Click ***OK*** to close the ***UNICORN Instrument Server Properties*** dialog. |

## Additional settings for database servers running on Windows XP

If the database is running on a computer with Windows XP, the following setting must also be set:

| In setting... | Also choose... |
|---|---|
| ***Security Configuration: Transaction Manager Communication***<br>(Step 7 in instruction *My Computer Properties - Windows XP* above) | ***No Authentication Required***.<br> |

# B.2 Manual uninstallation

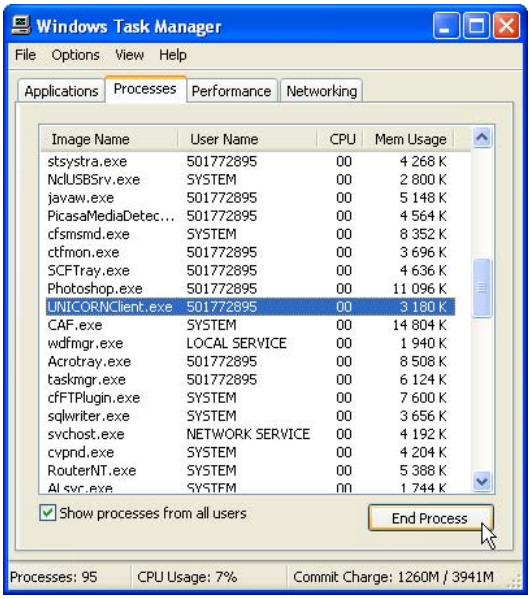
## Introduction

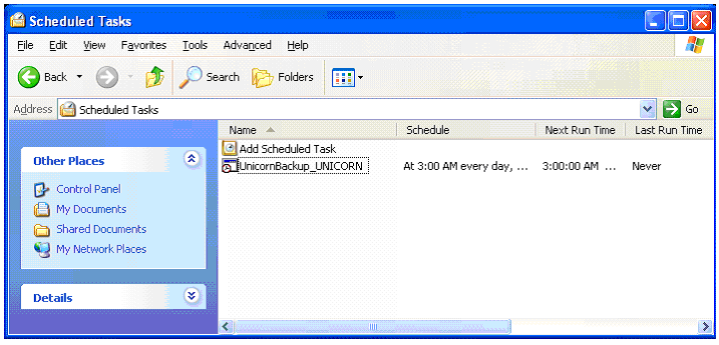
This appendix contains instructions for how to remove a UNICORN 6.1 and/or SQL Server installation manually in the event that the installation has become corrupt and cannot be removed in a regular manner.

## Remove a UNICORN 6.1 installation

The instruction below describes how to remove the UNICORN 6.1 installation:

| Step | Action |
|---|---|
| 1 | Open the ***Windows Task Manager***. |


Windows Task Manager
File Options View Help
Applications Processes Performance Networking
Image Name User Name CPU Mem Usage
stsystra.exe 501772895 00 4 268 K
NclUSBSrv.exe SYSTEM 00 2 800 K
javaw.exe 501772895 00 5 148 K
PicasaMediaDetec... 501772895 00 4 564 K
cfsmsmd.exe SYSTEM 00 8 352 K
ctfmon.exe 501772895 00 3 696 K
SCFTray.exe 501772895 00 4 636 K
Photoshop.exe 501772895 00 11 096 K
UNICORNClient.exe 501772895 00 3 180 K
CAF.exe SYSTEM 00 14 804 K
wdfmgr.exe LOCAL SERVICE 00 1 940 K
Acrotray.exe 501772895 00 8 508 K
taskmgr.exe 501772895 00 6 124 K
cFFTPlugin.exe SYSTEM 00 7 600 K
sqlwriter.exe SYSTEM 00 3 656 K
svchost.exe NETWORK SERVICE 00 4 192 K
cvpnd.exe SYSTEM 00 4 204 K
RouterNT.exe SYSTEM 00 5 388 K
Show processes from all users
End Process
Processes: 95 CPU Usage: 7% Commit Charge: 1260M / 3941M

| Step | Action |
|---|---|
| 2 | Select and end the following processes:<br>• UNICORN client<br>• UNICORN instrumentserver<br>• UNICORN Support Service<br>• NextCU<br>• VIDMain<br>Close the ***Windows Task Manager***. |
| 3 | Execute the following command:<br>• ***msiexec.exe /x {15F8765A-5854-4E3B-83EA-C38BBF390DCD} /qb***<br>*Result:* A silent uninstallation is performed. |
| 4 | Remove the UNICORN backup task:<br>1 Open the ***Scheduled Tasks*** dialog from the Windows ***Control Panel***.<br>  <br>2 Select the UNICORN backup task.<br>3 Click the ***Delete this item*** option in the ***Folder Tasks*** menu.<br>4 Close the ***Scheduled Tasks*** dialog. |
| 5 | Remove the folder ***C:\Program Files\GE Healthcare\UNICORN***.<br>***Note:*** *The actual search path to this folder depends on what was selected at the UNICORN installation.*<br>*This folder can contain backup files, log files and error reports that you may wish to save for future reference.* |
| 6 | Reboot the computer. |

## Remove the UNICORN database instance

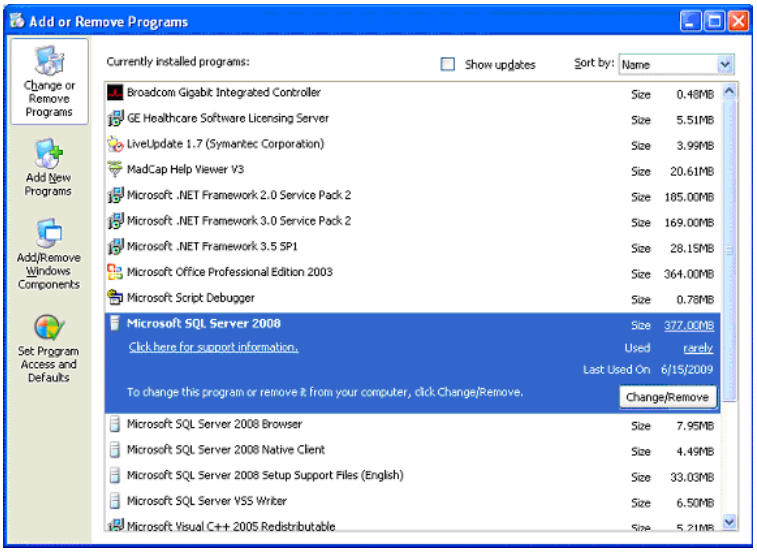
The instruction below describes how to remove the UNICORN database instance using the Windows ***Add or Remove Programs*** routine.

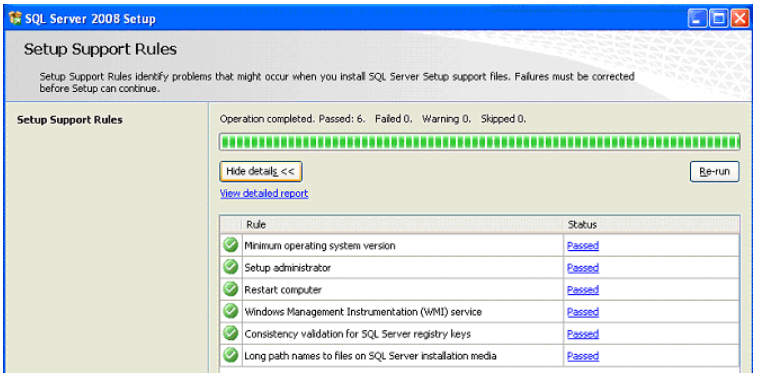
***Note:*** *Some of the images in the instruction have been cropped and do not show the available buttons on the bottom part of the dialog (**OK**, **Next**, **Back**, **Cancel**, **Help** etc.).*

**NOTICE**

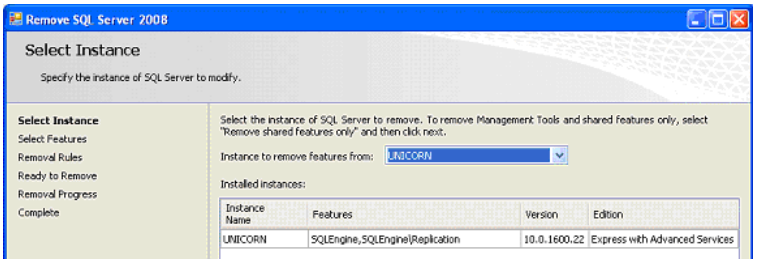
If more than one database instance is installed on the computer you must ensure that only the UNICORN database instance is removed. Do not remove Setup Support Files, Native Client or any SQL Server files, to ensure that the other database instances will remain operable.

| Step | Action |
|---|---|
| 1 | Start the Windows ***Control Panel*** and choose ***Add or Remove Programs***. |
| 2 | Select ***Microsoft SQL Server 2008*** and click the ***Change/Remove*** button. |

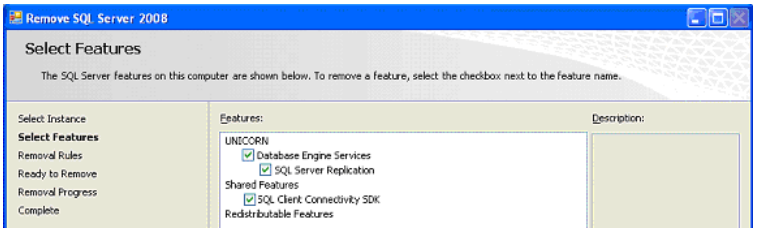

Add or Remove Programs
Change or Remove Programs
Add New Programs
Add/Remove Windows Components
Set Program Access and Defaults
Currently installed programs:
Show updates
Sort by: Name
Broadcom Gigabit Integrated Controller Size 0.48MB
GE Healthcare Software Licensing Server Size 5.51MB
LiveUpdate 1.7 (Symantec Corporation) Size 3.99MB
MadCap Help Viewer V3 Size 20.61MB
Microsoft .NET Framework 2.0 Service Pack 2 Size 185.00MB
Microsoft .NET Framework 3.0 Service Pack 2 Size 169.00MB
Microsoft .NET Framework 3.5 SP1 Size 28.15MB
Microsoft Office Professional Edition 2003 Size 364.00MB
Microsoft Script Debugger Size 0.78MB
Microsoft SQL Server 2008 Size 377.00MB
Click here for support information.
Used rarely
Last Used On 6/15/2009
To change this program or remove it from your computer, click Change/Remove.
Change/Remove
Microsoft SQL Server 2008 Browser Size 7.95MB
Microsoft SQL Server 2008 Native Client Size 4.49MB
Microsoft SQL Server 2008 Setup Support Files (English) Size 33.03MB
Microsoft SQL Server VSS Writer Size 6.50MB
Microsoft Visual C++ 2005 Redistributable Size 5.21MB

| Step | Action |
|---|---|
| 3 | The ***SQL Server 2008*** dialog opens.<br>• Choose the ***Remove*** option.<br> |
| 4 | A ***Setup Support Rules*** dialog will open and run a discovery operation to identify possible problems with the maintenance operation.<br>• Click the ***OK*** button to proceed after this operation step is completed.<br>  |

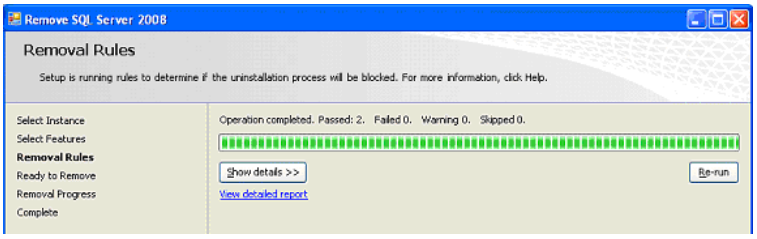
| Step | Action |
|---|---|
| 5 | • Select ***UNICORN*** as the ***Instance to remove features from*** and<br>• click the ***Next*** button to proceed. |



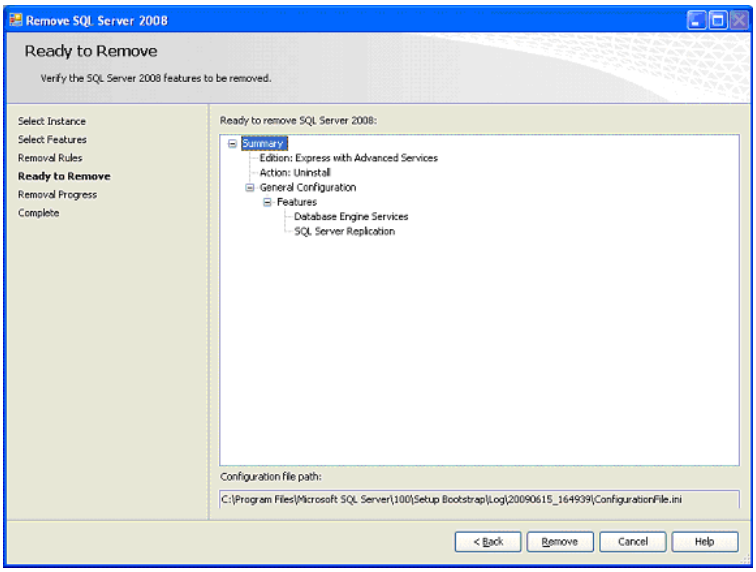

| | |
|---|---|
| 6 | • Select ***Database Engine Services*** and ***SQL Server Replication*** and<br>• click the ***Next*** button to proceed. |



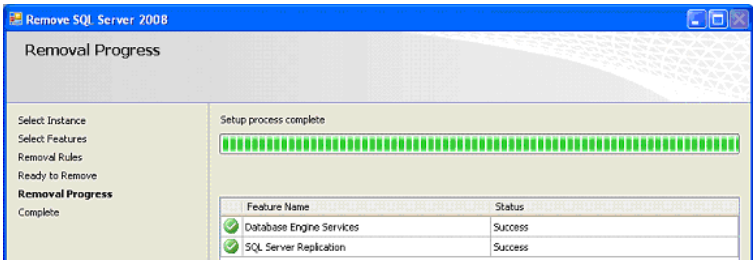

| | |
|---|---|
| 7 | Setup will run ***Removal Rules*** to identify possible problems with the removal.<br>• Click the ***Next*** button to proceed after this operation step is completed. |


Remove SQL Server 2008
Removal Rules
Setup is running rules to determine if the uninstallation process will be blocked. For more information, click Help.
Select Instance
Select Features
Removal Rules
Ready to Remove
Removal Progress
Complete
Operation completed. Passed: 2. Failed 0. Warning 0. Skipped 0.
Show details >>
Re-run
View detailed report

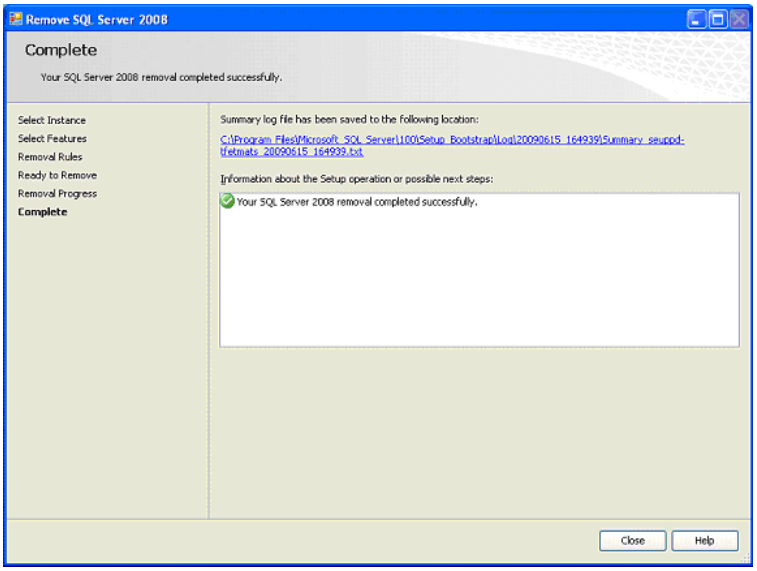
| Step | Action |
|---|---|
| 8 | A summary of the removal operation will be shown.<br>• Click the ***Remove*** button to proceed. |




| | |
|---|---|
| 9 | The progression of the removal operation will be shown.<br>• Click the ***Next*** button to proceed after this operation step is completed. |



| Step | Action |
|---|---|
| 10 | The ***Complete*** dialog opens. This dialog provides a link to a summary log file. |




- Read the information in the log file and on the ***Complete*** page.
- Click the ***Close*** button to close the wizard dialog.
- Close the ***Add or Remove Program*** dialog.

## Uninstalling an existing instance of SQL Server

The instruction below describes how to uninstall SQL Server if the procedure described above cannot be used.

**NOTICE**

The uninstallation procedure below should only be used if the UNICORN database instance is the only database instance installed on the computer. The procedure described will cause all Microsoft SQL Server-related entries to be completely deleted from the computer.

| Step | Action |
|---|---|
| 1 | Perform a backup of the Windows Registry. |
| 2 | Delete the registry keys listed below:<br>• ***HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Microsoft SQL Server***<br>• ***HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\MSSQLServer*** |
| 3 | • Locate and select the key ***HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager***.<br>• If there is an entry ( of the ***Type REG_MULTI_SZ***) named ***PendingFileRenameOperations***:<br>1 Right-click the entry and choose the ***Modify*** menu command.<br>*Result:* The ***Edit Multi-String*** dialog opens.<br>2 Clear the ***Value data***.<br>3 Click ***OK*** to close the dialog and update the ***Data*** column.<br>• If there is a key ***HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\FileRenameOperations***:<br>1 Right-click the key and choose the ***Rename*** menu command.<br>2 Change the name to ***FileRenameOperations2***.<br>***Note:*** *After a successful installation, the name of this key should be restored to* ***FileRenameOperations***. |

| Step | Action |
|---|---|
| 4 | Delete the SQL Server related services from<br>• ***HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSSQL***<br>For example<br>- ***MSSQL$UNICORN***<br>- ***MSSQLFDLauncher$UNICORN***<br>- ***MSSQLServerADHelper100***<br>- ***SQLAgent$UNICORN***<br>- ***SQLBrowser***<br>- ***SQLWriter*** |
| 5 | Rename all folders on Microsoft SQL Server under ***C:\Program Files*** and in any data drive. |
| 6 | Download the cleanup utility from ***http://support.microsoft.com/kb/290301*** |
| 7 | • Install and run the utility, and select all the SQL Server and MSXML6 entries.<br> <br>*(Normally, there will be only three or four SQL Server entries - the illustration above shows the clean up of an advanced installation)*<br>• Click the ***Remove*** button.<br>• Click the ***Exit*** button to close the utility. |
| 8 | Reboot the computer. |

Windows Installer Clean Up
Continuing further will make permanent changes to your system. You may need to reinstall some or all applications on your system that used the Windows Installer technology to be installed. If you do not want to proceed, please press the 'Exit' button now. Choosing 'Remove' will make the permanent changes.
Installed Products:
(All Users) Microsoft Office XP Standard [10.0.6626.0]
(All Users) Microsoft Silverlight [2.0.31005.0]
(All Users) Microsoft SQL Server 2008 Browser [10.0.1600.22]
(All Users) Microsoft SQL Server 2008 Client Tools [10.0.1600.22]
(All Users) Microsoft SQL Server 2008 Client Tools [10.0.1600.22]
(All Users) Microsoft SQL Server 2008 Common Files [10.0.1600.22]
(All Users) Microsoft SQL Server 2008 Common Files [10.0.1600.22]
(All Users) Microsoft SQL Server 2008 Database Engine Services [10.
(All Users) Microsoft SQL Server 2008 Database Engine Services [10.
(All Users) Microsoft SQL Server 2008 Database Engine Shared [10.0.
(All Users) Microsoft SQL Server 2008 Database Engine Shared [10.0.
(All Users) Microsoft SQL Server 2008 Full text search [10.0.1600.22]
(All Users) Microsoft SQL Server 2008 Integration Services [10.0.1600
(All Users) Microsoft SQL Server 2008 Integration Services [10.0.1600
Select All
Clear All
Remove
Exit

**Tip:** For more information refer to ***http://msdn.microsoft.com/en-us/library/ms143412.aspx***

# Appendix C Post installation settings

## Introduction

This appendix describes various procedures that may be necessary to perform to ensure proper operation after the installation of UNICORN 6.1. The need for these procedures depend on the your network setup and/or the computer workstations.

## Disk space for a database server (standalone installation)

The free space of the disk or disk partition where the UNICORN archive and backup files are going to be located should be at least 160 GB to avoid errors related to insufficient disk space.

A database for one, or for several, systems that has been in use for an extended period of time will contain large amounts of data. Backups corresponding to two weeks and some archived data will therefore require a large amount of disk space. For this reason, a minimum disk space of 160 GB should be reserved.

## Windows update

Windows update may interfere with UNICORN and interrupt ongoing runs. To avoid this, it is recommended that automatic updates are disabled. Run the updates manually on the computer when UNICORN is not in use.

## Anti-virus software

Anti-virus software may interfere with the operation of UNICORN and must be regulated accordingly. It may be necessary to avoid any virus scan while runs are in progress in order to avoid complications.

The following folders should not be scanned:

- ***C:\Program Files\GE Healthcare\UNICORN\Logs***
- ***C:\Program Files\GE Healthcare\UNICORN\Database***
- ***C:\Program Files\GE Healthcare\UNICORN\Runtime Backup***
- ***C:\Program Files\GE Healthcare\UNICORN\Backup***

- ***C:\Program Files\GE Healthcare\UNICORN\Archive***

***Note:*** *This assumes that UNICORN 6.1 has been installed in the default path suggested by the installation program.*

## Disable Power Save

If the UNICORN computer enters standby or hibernation mode while a run is in progress, the run will be interrupted and the ÄKTA avant system will lose its connection to UNICORN. To avoid this, disable any power save mode settings in Windows. This is done by adjusting the power save options in the Windows Control Panel.

Power save must also be disabled for the Network Interface Cards. This is described below.

***Note:*** *This process may differ slightly depending on the network card device driver.*

### Windows XP

| Step | Action |
|---|---|
| 1 | • Open the Windows ***Control Panel*** and<br>• choose ***Network Connections***. |
| 2 | • Right-click the network connection for the Network Interface Card and<br>• choose ***Properties*** from the menu.<br>*Result:* The ***Properties*** dialog for the network connection opens. |
| 3 | Click the ***Configure*** button.<br>*Result:* The ***Properties*** dialog for the card opens. |
| 4 | • Click the ***Power Management*** tab and<br>• De-select the ***Allow the computer to turn off this device to save power*** option. |
| 5 | Click ***OK*** to apply the changes. |

### Windows 7

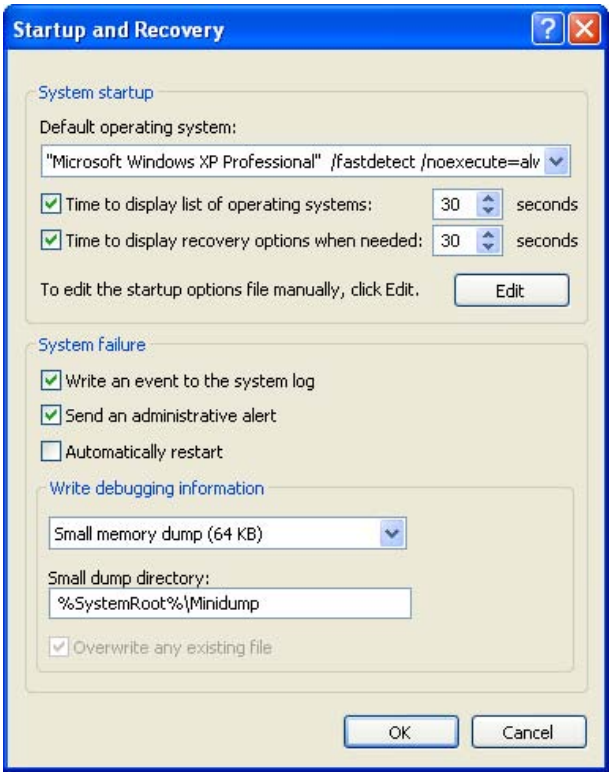
| Step | Action |
|---|---|
| 1 | • Open the Windows ***Control Panel***<br>• choose ***Network and Internet***.<br>and<br>• ***Network and Sharing Center***. |
| 2 | Click ***Change adapter settings*** in the left panel. |
| 3 | • Right-click the network connection for the Network Interface Card<br>and<br>• choose ***Properties*** from the menu.<br>*Result:* The ***Properties*** dialog for the network connection opens. |
| 4 | Click the ***Configure*** button.<br>*Result:* The ***Properties*** dialog for the card opens. |
| 5 | • Click the ***Power Management*** tab<br>and<br>• De-select the ***Allow the computer to turn off this device to save power*** option. |
| 6 | Click ***OK*** to apply the changes. |

## Disable Automatic restart

Serious errors in Windows may cause the operating system to halt, to prevent possible damage. This is usually caused by faulty drivers. When this occurs, a blue screen is displayed with technical information in white text. The default setting for Windows is to automatically restart after this blue screen is displayed. This is normally not the desired behaviour, as the technical information is essential in order to diagnose the cause for the error. It is a recommendation to disable the automatic restart function so that crash codes can be saved. Follow the instructions below to disable the automatic restart function:

| Step | Action |
|---|---|
| 1 | • Right-click on ***My Computer*** and choose ***Properties***.<br>*Result:* The ***System Properties*** dialog opens. |

| Step | Action |
|---|---|
| 2 | • Select the ***Advanced*** tab<br>and<br>click the ***Settings*** button in the ***Startup and Recovery*** field.<br>*Result:* The ***Startup and Recovery*** dialog opens. |




| | |
|---|---|
| 3 | De-select the ***Automatically restart*** checkbox. |
| 4 | Click ***OK*** in all open dialogs to apply the changes and close the dialogs. |

## Internet time synchronization

When UNICORN is run in a network environment there is a need to ensure that the time of the connected computers is synchronized. In order to be able to compare time and dates for items stored in the database, for example with timestamps in log files, all UNICORN computers in the network must be on synchronized time.

If the company has an available Internet Time Server, it is preferable that the UNICORN computers are set to automatically synchronize time using that server. If no company Internet Time Server is available, then ***time.windows.com*** can be used as an alternative.

The instruction below describes how to set the Internet time synchronization option.

| Step | Action |
|---|---|
| 1 | Double-click the time on the righthand end of the Windows taskbar.<br>*Result:* The ***Date and Time Properties*** dialog opens. |
| 2 | Select the ***Internet Time*** tab.<br>***Note:*** *If this tab is not shown, it may have been disabled by Domain policies.* |
| 3 | Select the ***Automatically synchronize with an Internet time server*** checkbox. |
| 4 | Enter the Internet Time Server in the ***Server*** field. |
| 5 | Click ***OK*** to apply the changes and close the dialog. |

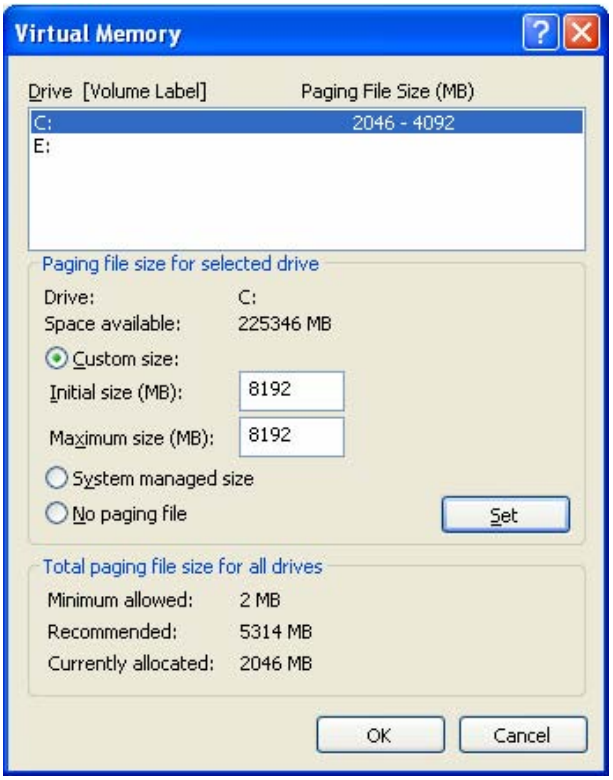
***Note:*** *If the UNICORN computer is used for a standalone ÄKTA avant installation in a workgroup and there is no access to* ***time.windows.com****, de-select the* ***Automatically synchronize with an Internet time server*** *checkbox.*

## Update paging file size

It is recommended that the paging file is twice the size of the main memory for a UNICORN 6.1 computer used with ÄKTA avant. The instruction below describes how to increase the paging file size to an appropriate size:

| Step | Action |
|---|---|
| 1 | • Right-click on the ***My Computer*** desktop icon (or in Windows Explorer) and choose ***Properties***.<br>*Result:* The ***System Properties*** dialog opens. |

| Step | Action |
|---|---|
| 2 | • Select the ***Advanced*** tab<br>and<br>click the ***Settings*** button in the ***Performance*** field.<br>*Result:* The ***Performance Options*** dialog opens. |
| 3 | • Select the ***Advanced*** tab<br>and<br>click the ***Change*** button in the ***Virtual memory*** field.<br>*Result:* The ***Virtual Memory*** dialog opens. |




| | |
|---|---|
| 4 | Set the ***Initial size (MB)*** and ***Maximum size (MB)*** for the paging file to twice the size of the computer's memory.<br>For example, if the computer has 4 GB of memory, set the values to 8192 as shown in the illustration above. |

| Step | Action |
| --- | --- |
| 5 | Click ***OK*** in all open dialogs to apply the changes and close the dialogs. |

# Appendix D Additional computer setting changes

## Introduction

This appendix contains instructions how to perform certain computer setting changes after installation.

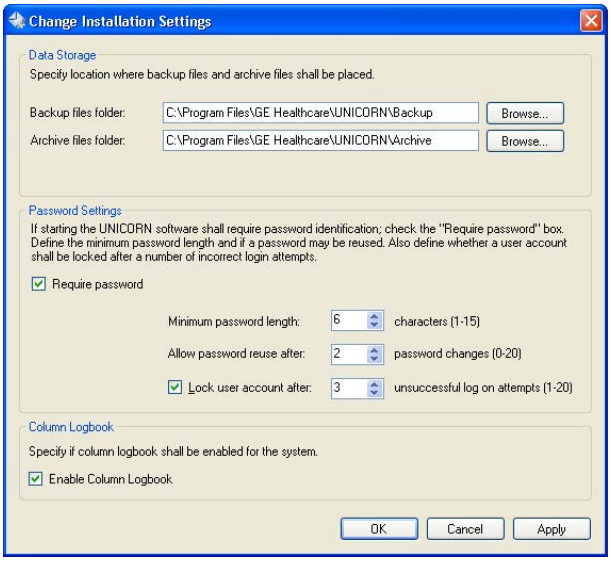
## Changing installation settings

Certain installation settings can be changed by opening the ***Change Installation Settings*** dialog from the Windows ***Start:Programs*** menu. This dialog is opened by choosing the menu item

- ***GE Healthcare:UNICORN:Configuration Tools:Change Installation Settings***

In this dialog you can

- Change folders for backup and archiving
- Change the password settings for the UNICORN installaiton
- Enable or disable the ***Column Logbook***.


Change Installation Settings
Data Storage
Specify location where backup files and archive files shall be placed.
Backup files folder:
C:\Program Files\GE Healthcare\UNICORN\Backup
Browse...
Archive files folder:
C:\Program Files\GE Healthcare\UNICORN\Archive
Browse...
Password Settings
If starting the UNICORN software shall require password identification; check the "Require password" box. Define the minimum password length and if a password may be reused. Also define whether a user account shall be locked after a number of incorrect login attempts.
Require password
Minimum password length:
6
characters (1-15)
Allow password reuse after:
2
password changes (0-20)
Lock user account after:
3
unsuccessful log on attempts (1-20)
Column Logbook
Specify if column logbook shall be enabled for the system.
Enable Column Logbook
OK
Cancel
Apply

## Changing standalone or database server computer name

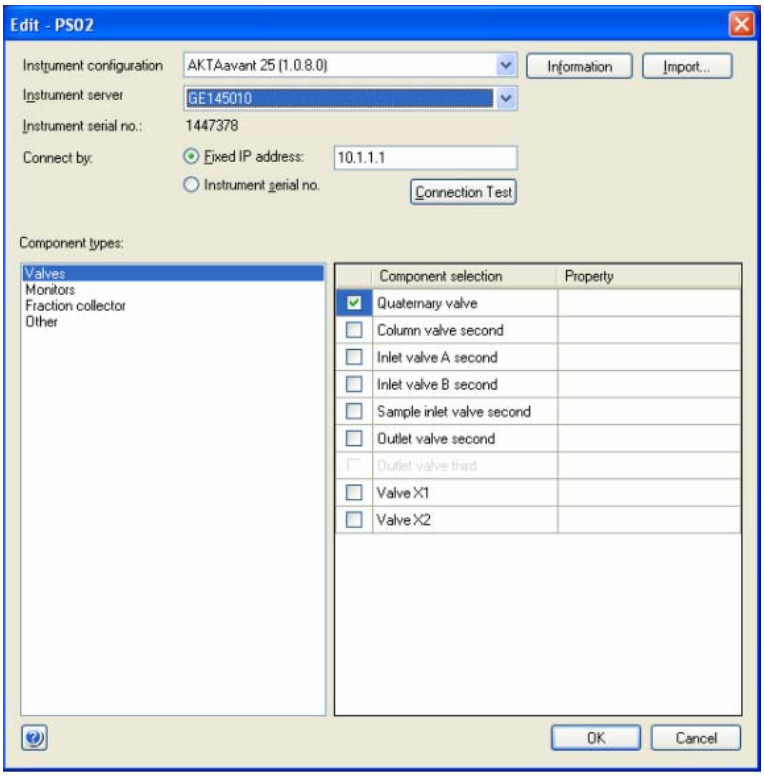
The instruction below describes the steps that must be completed if the name of the computer which is used for a standalone or database server installation of UNICORN 6.1 is changed.

| Step | Action |
|---|---|
| 1 | • Open the ***System Properties*** dialog<br>(right-click on the ***My Computer*** desktop icon and choose the ***Properties*** menu item)<br>and<br>• select the ***Computer Name*** tab. |
| 2 | Click the ***Change*** button.<br>*Result:* The ***Computer Name Changes*** dialog opens. |
| 3 | • Enter the new name in the ***Computer name*** field,<br>• click ***OK*** in the open dialogs to apply the change,<br>and<br>• restart the computer. |
| 4 | After the computer has restarted, open a ***Command Prompt*** window[5]. |

5 In Windows XP, click the ***Start*** button and choose ***All Programs:Accessories:Command Prompt***.
In Windows 7, click the Windows icon and choose ***All Programs:Accessories:Command Prompt***.
You can also press and hold the Windows key and then press the letter **R**. Type ***cmd*** in the input field and press **Enter**.

| Step | Action |
|---|---|
| 5 | • Change to the database directory:<br>***C:\>cd C:\Program Files\GE Healthcare\UNICORN\Database***<br>(The example above assumes that UNICORN was installed in the default directory)<br>• Run the RenameSQLServer.bat script:<br>***C:\>RenameSQLServer.bat*** "old computer name"***\UNICORN*** "new computer name"***\UNICORN***<br>(e.g. ***C:\>RenameSQLServer.bat HP14603418012\UNICORN GE145010\UNICORN***)<br>***Note:*** *The following messages will be displayed, and should be ignored:*<br>• *System error 1060 has occurred.*<br>*The specified service does not exist as an installed service.*<br>• *The service name is invalid.*<br>*More help is available by typing NET HELPMSG 2185*<br>*These messages are displayed when the script tries to start and stop the SQL Server database engine.* |
| 6 | Reboot the computer. |
| 7 | To verify the name change, open a command prompt window and execute the following command:<br>• ***C:>sqlcmd -Slocalhost\UNICORN -Q"select @@servername***<br>*Result:* The new name should be shown as in the example below:<br>**GE145010\UNICORN**<br>**(1rows affected)** |
| 8 | Start UNICORN and open the ***Administration*** module. |
| 9 | • Open the ***System Properties*** dialog,<br>• select the system<br>and<br>• click the ***Edit*** button.<br>*Result:* The ***Edit*** system dialog opens. |

| Step | Action |
|---|---|
| 10 | Select the new server computer name from the ***Instrument server*** menu: |




| | |
|---|---|
| 11 | • Click the ***OK*** button to perform the change and<br>• log off UNICORN. |
| 12 | Restart the computer. |
| 13 | • Start and log on to UNICORN and<br>• connect to the instrument. |

# Changing computer names in a distributed environment

The following instructions apply when changing computer names in a network environment, i.e. not for a standalone system.

## Changing computer name for a standalone or database server computer

If the database server name has been changed in a distributed environment, some configuration files must be updated accordingly on the UNICORN instrument server and UNICORN client computers:

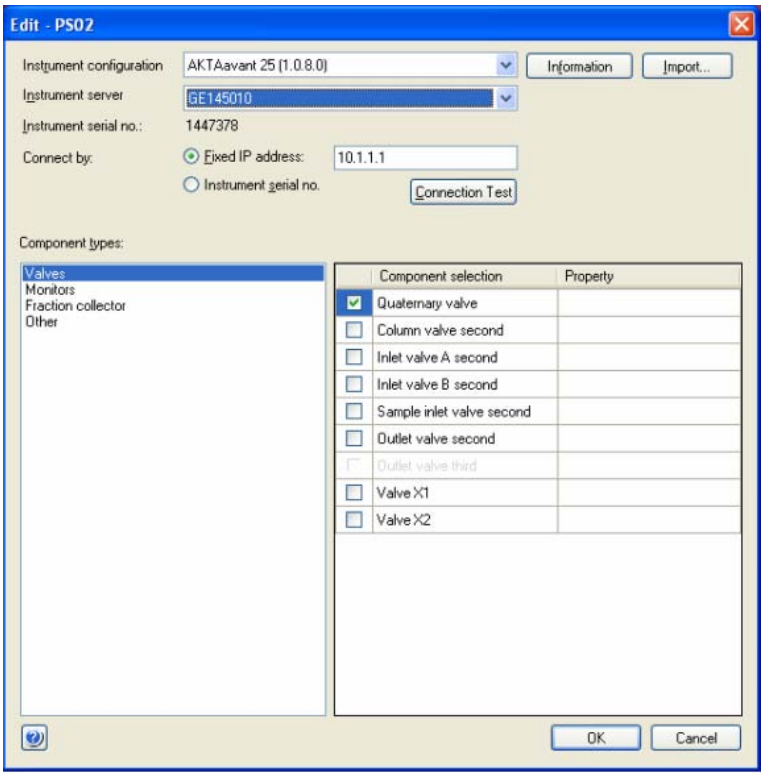
| Step | Action |
|---|---|
| 1 | Start UNICORN on the instrument server or client computer.<br>*Result:* UNICORN detects that the database cannot be located. The ***Log On - No database is found*** dialog opens. |
| 2 | Click ***Locate Database***, browse to the database server and select the appropriate database. |
| 3 | Restart the instrument server or client computer. |

## Changing name for a computer that serves as instrument server only

The instruction below describes the steps that must be completed if the name of a computer, which is used as an instrument server in a distributed installation, is changed.

| Step | Action |
|---|---|
| 1 | • Change the name of the computer as described in *"Changing standalone or database server computer name"* above<br>and<br>• reboot. |
| 2 | Start UNICORN and open the ***Administration*** module. |
| 3 | • Open the ***System Properties*** dialog,<br>• select the system<br>and<br>• click the ***Edit*** button.<br>*Result:* The ***Edit*** system dialog opens. |

| Step | Action |
|---|---|
| 4 | Select the new server computer name from the ***Instrument server*** menu: |




| | |
|---|---|
| 5 | • Click the ***OK*** button to perform the change and<br>• log off UNICORN. |
| 6 | Restart the computer. |
| 7 | • Start and log on to UNICORN and<br>• connect to the instrument. |

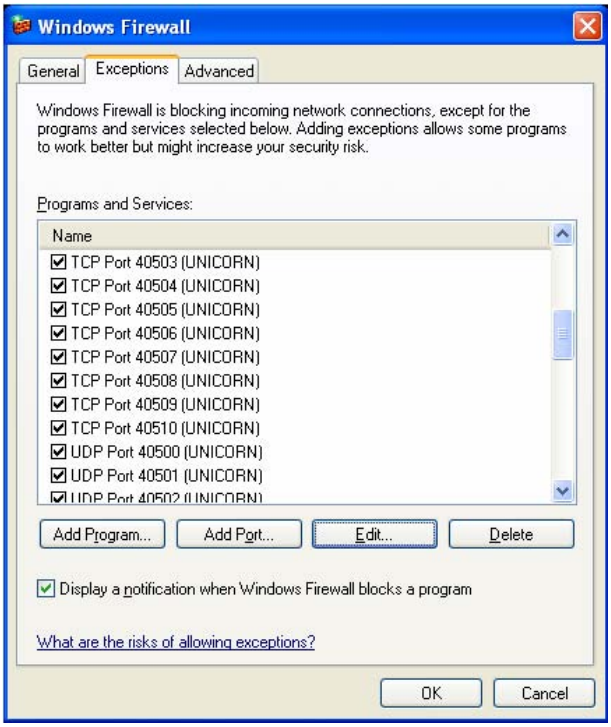
## Moving a Workgroup PC to a Domain after a UNICORN 6.1 installation

The instruction below describes the actions necessary to verify and edit the firewall settings for proper operation after a UNICORN computer has been moved from a Workgroup to a Domain:

***Note:*** *The following instruction describes the Windows firewall. If another firewall is used, the corresponding settings must be verified. The search paths shown below are valid if UNICORN was installed in the default directory.*

| Step | Action |
|---|---|
| 1 | Open the Windows ***Control Panel***. |
| 2 | Open the ***Security Center***. |
| 3 | Choose ***Windows Firewall***. |

| Step | Action |
|---|---|
| 4 | • Click the ***Exceptions*** tab<br>and<br>• verify that the changes made to the ***Windows Firewall*** configuration are still functional: |


Windows Firewall
General
Exceptions
Advanced
Windows Firewall is blocking incoming network connections, except for the programs and services selected below. Adding exceptions allows some programs to work better but might increase your security risk.
Programs and Services:
Name
TCP Port 40503 (UNICORN)
TCP Port 40504 (UNICORN)
TCP Port 40505 (UNICORN)
TCP Port 40506 (UNICORN)
TCP Port 40507 (UNICORN)
TCP Port 40508 (UNICORN)
TCP Port 40509 (UNICORN)
TCP Port 40510 (UNICORN)
UDP Port 40500 (UNICORN)
UDP Port 40501 (UNICORN)
Add Program...
Add Port...
Edit...
Delete
Display a notification when Windows Firewall blocks a program
What are the risks of allowing exceptions?
OK
Cancel

| Step | Action |
|---|---|
| 5 | Click the ***Add Programs*** button and add the following programs to the ***Exceptions*** list if necessary: |

| Program | Search path |
|---|---|
| UNICORN Client | ***C:\Program Files\GE Healthcare\UNICORN\Bin\UNICORNClient.exe*** |
| UNICORN Instrument Server | ***C:\Program Files\GE Healthcare\UNICORN\Bin\UNICORN Instrument Server.exe*** |
| UNICORN System Creator | ***C:\Program Files\GE Healthcare\UNICORN\Bin\SystemInstallation.exe*** |
| SQL Server for UNICORN | ***C:\Program Files\Microsoft SQL Server\MSSQL10.UNICORN\MSSQL\Binn\Sqlservr.exe*** |
| GE Healthcare Software Licensing Server | ***C:\Program Files\GE Healthcare\eLicense server\gehealth.exe*** |
| GE Healthcare License Server Manager | ***C:\Program Files\GE Healthcare\eLicense server\lmgrd.exe*** |

| Step | Action |
|---|---|
| 6 | Ensure that the following ports are open for traffic for the specified networking protocols. |

| Port | Port |
|---|---|
| *TCP 40500* | *UDP 40500* |
| *TCP 40501* | *UDP 40501* |
| *TCP 40502* | *UDP 40502* |
| *TCP 40503* | *UDP 40503* |
| *TCP 40504* | *UDP 40504* |
| *TCP 40505* | *UDP 40505* |
| *TCP 40506* | *UDP 40506* |
| *TCP 40507* | *UDP 40507* |
| *TCP 40508* | *UDP 40508* |
| *TCP 40509* | *UDP 40509* |
| *TCP 40510* | *UDP 40510* |

Click the ***Add Port*** button and add the ports to the ***Exceptions*** list if necessary.

| Step | Action |
|---|---|
| 7 | Ensure that the following ports are open for traffic for the specified networking protocols. |

| Port | Port |
|---|---|
| ***UDP 50000*** | ***UDP 50001*** |
| ***UDP 50002*** | ***UDP 50003*** |
| ***UDP 50004*** | ***UDP 50005*** |
| ***UDP 50006*** | ***UDP 50007*** |
| ***UDP 50008*** | ***UDP 50009*** |
| ***TCP 135*** | ***UDP 1434*** |

Click the ***Add Port*** button and add the ports to the ***Exceptions*** list if necessary.

| | |
|---|---|
| 8 | Click ***OK*** to apply the changes and close the dialogs. |

### OPC settings for UNICORN flow scheme

If the UNICORN computer is not used for a standalone system, then settings regarding OPC must be updated in order for the flow scheme to work properly. See *Section 2.5 OPC settings for UNICORN flow scheme, on page 101* for information about these settings.

## Actions for cloned computers

If the Windows operating system for a UNICORN 6.1 computer is installed using a cloning mechanism, the cloning must follow the guidelines for disk duplications of Windows XP installations.

For more information see *The Microsoft policy concerning disk duplication of Windows XP installations* (http://support.microsoft.com/default.aspx?scid=kb;EN-US;314828).

For more information about imaging and automated installations of different Windows versions, see *Microsoft Deployment Toolkit (MDT) 2010* (http://www.microsoft.com/downloads/details.aspx?FamilyId=3BD8561F-77AC-4400-A0C1-FE871C461A89&displaylang=en).

## General computer management

If the UNICORN computer is not supplied by GE Healthcare, it is a recommended practise to check the computer vendor website to see if there are any known issues with the computer, and that all computer drivers are up-to-date.

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